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IowaMedicine

Volume 78 Number 1

Journal of the Iowa Medical Society

January 1988

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: \$10 per year. Printed by the Ovid Bell Press, Inc., Springfield, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

ADDITIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Third, Oak Park, Ill. 60302. Phone 312/383-8800

ADVERTISING: Contact Jane Nieland, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

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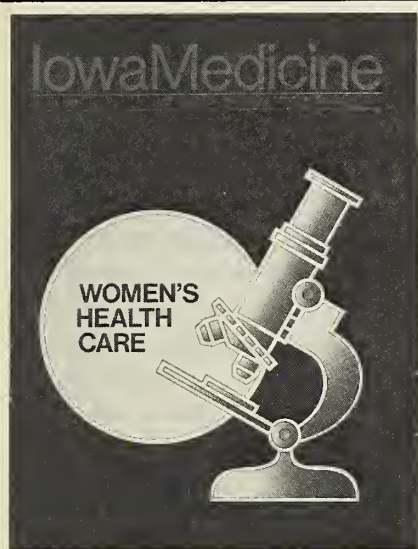
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Marketing studies have identified women as key health care consumers. This month's magazine is devoted to women's health care and contains articles on premenstrual syndrome, osteoporosis and other issues of concern to women and their physicians. Cover art by Sharon Johnson.

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**MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS
“UPDATE ON
INFECTIOUS DISEASES”
FEBRUARY 17, 1988**

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“ENDOCARDITIS”

“SURGICAL PROPHYLAXIS”

**“LEGAL ASPECTS OF NOSOCOMIAL
INFECTIONS”**

“ANTIBIOTIC UPDATE '88”

“CYTOMEGALOVIRUS INFECTIONS”

“NEONATAL AND PEDIATRIC MENINGITIS”

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SIXTH AND UNIVERSITY
DES MOINES, IOWA 50314
(515) 247-3042**

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February 1988

Journal of the Iowa Medical Society



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The quality of our emergency medical services can literally mean the difference between life and death for victims of heart attacks, motor vehicle accidents and other medical emergencies. This month's IOWA MEDICINE explores the current EMS picture across Iowa. Cover art by Judy Mueller.

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**MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS
“PROBLEMS IN
MEDICAL PRACTICE”
MARCH 16, 1988**

GUEST FACULTY

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DEPARTMENT OF HISTORY/PHILOSOPHY OF
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UNIVERSITY OF KANSAS MEDICAL COLLEGE
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PATRICK SWEENEY, M.D.
DEPARTMENT OF NEUROLOGY
CLEVELAND CLINIC
CLEVELAND, OHIO

TOPICS:

“ETHICS OF THERAPY: PEDIATRICS”

“ETHICS OF THERAPY: GERIATRICS”

**“DEATH: THE RIGHT TO DIE; NO CODES,
EUTHANASIA, AND OTHER PLEASANTRIES”**

**“THE ACUTE STROKE PATIENT: EVALUATION
AND MANAGEMENT”**

**“NEWER CONCEPTS IN THE ETIOLOGY AND
TREATMENT OF PARKINSON’S DISEASE”**

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In a few short years since 1981, physicians have seen the AIDS situation move from a few isolated cases to the status of a national epidemic with the potential to place an enormous burden on our health care system. This issue of *IOWA MEDICINE* examines the AIDS picture in Iowa from several aspects of vital interest to Iowa physicians.

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**MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS
FIFTH ANNUAL MERCY
INTERVENTIONAL CARDIOLOGY
CONFERENCE
APRIL 13, 1988**

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Nursing CEU's: 0.75 (7.5 contact hours).

Application has been made for A.A.F.P. and A.O.A. accreditations.

TOPICS

"TPA AND CORONARY ANGIOPLASTY IN ACUTE MYOCARDIAL INFARCTION"

"REPERFUSION INJURY"

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IowaMedicine

April 1989 Journal of the Iowa Medical Society



UNIVERSITY OF IOWA

College of Medicine

About the Cover

Freshman medical students Vickie Diamandakis, Dubuque and Joe Aguiar, Waterloo, demonstrate total concentration in their general pathology course in The University of Iowa College of Medicine. Photos for "Making of a Doctor — 1988" were taken by Mary Abboud-Kamps, Tom Jorgensen, Jeff Meyers, Warren Paris, Mark Sitterson and Leah Zipf. Layout by Amy Roach.

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**ANNUAL MEETING
of the
AMERICAN COLLEGE OF PHYSICIANS
IOWA CHAPTER
in association with the
IOWA CLINICAL SOCIETY OF INTERNAL MEDICINE**

May 13 - 14, 1988

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Iowa City, Iowa*

PROGRAM

Friday, May 13

8:15 a.m. - 5:00 p.m.

Concepts of Thrombosis: Clinical Implications

Lovastatin: Is This It?

Health Policy Forum

Panel: The Future of Internal Medicine

Gallstone Lithotripsy

Approach to Hypercholesterolemia

Office Rheumatology

Swan Ganz Catheterization

Saturday, May 14

8:00 a.m. - 12:00 p.m.

HIV Infection: Predictors of Prognosis and Current Therapy

Polyradiculoneuropathies

The Newest Antihypertensives

Variations in Medical Practice Patterns

GUEST FACULTY:

Nicholas E. Davies, M.D., F.A.C.P., Clinical Professor of Medicine, Emory University, Chief of Medicine, Piedmont Hospital, Atlanta, Georgia

Deborah Prout, Director of Health and Public Policy, A.C.P., Philadelphia, Pennsylvania

Richard D. Ruppert, M.D., Trustee, A.S.I.M., President, Medical College of Ohio, Toledo

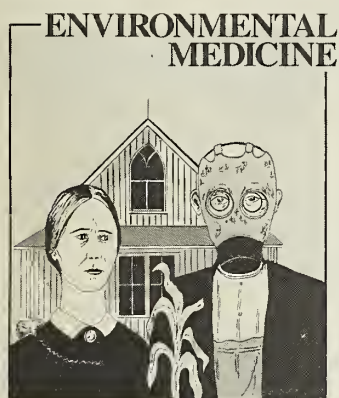
**For a detailed agenda along with advance registration information, contact
William Radl, Arrangements Coordinator, Department of Internal Medicine, The
University of Iowa Hospitals and Clinics, Iowa City, Iowa 52242 or call (319) 335-8957.**

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IowaMedicine

May 1990

Journal of the Iowa Medical Society



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As graphically demonstrated by our cover spoof of Grant Wood's "American Gothic", farming is a potentially hazardous occupation. This issue of *IOWA MEDICINE* is devoted to the latest developments in agricultural and environmental medicine.

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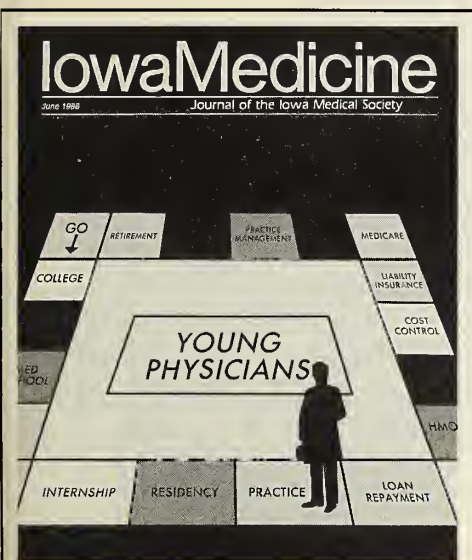
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This month's magazine focuses on the 1988 House of Delegates meeting. Pictured on the cover are House of Delegates Speaker William Rosenfeld, M.D., Mason City; House Vice-Speaker Donald Kahle, M.D., Dubuque and physician delegates.

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About the Cover

This issue of *IOWA MEDICINE* is devoted to care of the dying patient. Articles discuss the role of the physician in hospice care and how professionals involved in caring for terminally ill patients can work together to create the best possible environment.

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September 30, 1988

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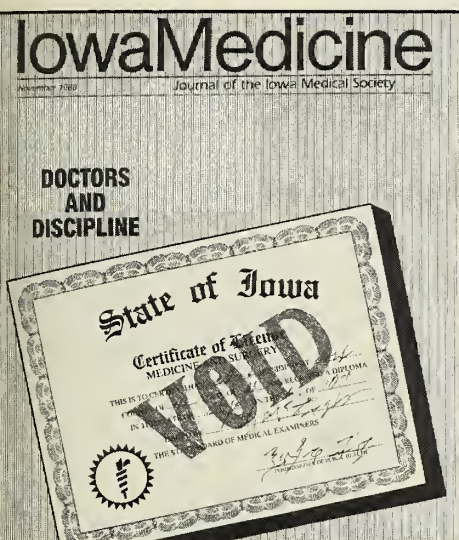
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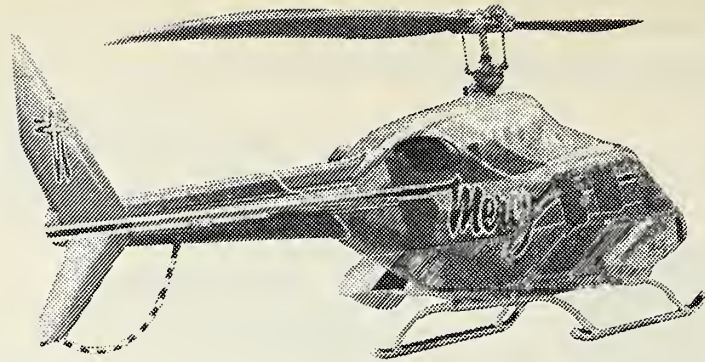
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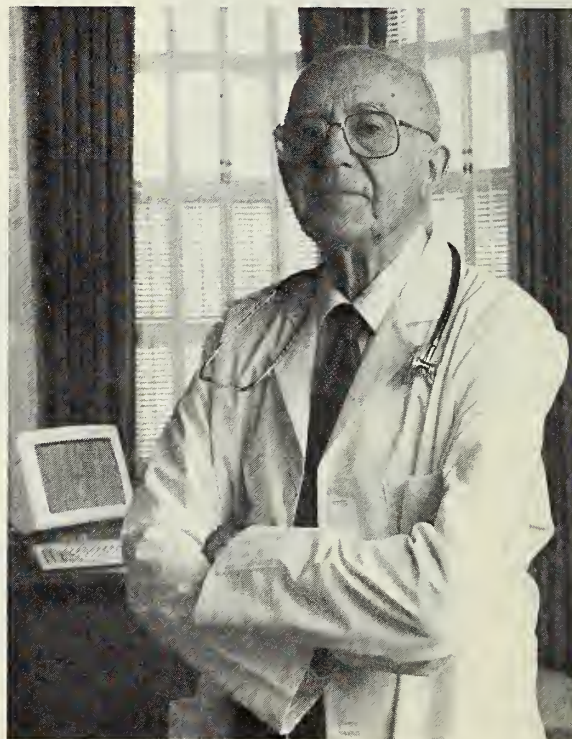
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President's Privilege



A New Year, A New Opportunity

THE LATEST MARKETING research indicates women are key health care consumers and health care decision-makers for their families. This edition of IOWA MEDICINE focuses on several aspects of health care for women. This month is also the debut of a regular monthly features called "Practice Management." In the months ahead, this column will provide useful information on managing the business side of a medical practice.

Within just a few days, lawmakers from across Iowa will gather in Des Moines for the 1988 session of the Iowa General Assembly. As we read in last month's issue of IOWA MEDICINE, this legislative session promises to be a key one for Iowa physicians.

The slate of bills affecting physicians scheduled to be put before Iowa legislators this year is notable. Tort reform. Mandatory Medicare assignment. Scope of practice expansion for various limited health care practitioners. Repeal of the seat belt law. These are only a few items on a long list of possible legislation affecting health care delivery.

It's been said more than once, but it bears repeating. NOW IS THE TIME to contact your legislator and discuss your perspective on these issues. Let your legislator know how the lia-

bility crisis is affecting your patients and your practice. Tell your legislator how mandatory Medicare assignment would hinder your freedom to assist needy elderly patients. Communicate your concern over expanding practice scopes of practitioners who are inadequately qualified to give optimal care in certain areas. Reiterate our conviction that seat belts save lives.

During the next few months, we will have a golden opportunity to help shape laws that affect us and our patients. It's not too late to get educated and get involved.

A handwritten signature in cursive script that reads "D J Walter M.D.".

Dennis J. Walter, M.D.
President

Osteoporosis — An Overview

PATRICK M. SULLIVAN, M.D.

Des Moines, Iowa

Osteoporosis — the loss of critical bone mass — is a disease which strikes older white women at a higher rate than any other segment of the population. The author gives an overview of the disease and offers suggestions regarding its treatment and prevention.

OSTEOPOROSIS WAS FIRST DESCRIBED in the 1920's. This rather recent appreciation of a heterogeneous group of bone diseases is reasonable since investigation is usually directed towards prominent clinical problems of the time. As mankind controlled infectious and other acute diseases, life expectancy increased and diseases such as osteoporosis became clinically evident. Our understanding of the disease and its treatment and prevention continues to evolve.

Osteoporosis is the loss of bone mass evidenced radiographically by osteopenia. A severe loss will result in clinical problems such as fractures. There are many etiologies within the heterogeneous group of osteopenic disorders. Scurvy or osteogenesis imperfecta are osteopenic disorders that result from a collagen defect. Decreased mineral availability can result in osteomalacia. Marrow occupying tu-

mors such as multiple myeloma, Hodgkin's disease, leukemia and lymphoma present an osteopenic picture. Hyperparathyroidism and hyperthyroidism are endocrinopathies that, in addition to mechanical disuse, must be considered in the differential diagnosis.

Senile or postmenopausal osteoporosis is the main focus of this paper. The existence of this entity does not necessarily exclude a concomitant occurrence of other causes of osteoporosis.

Who Is Vulnerable

The cause of postmenopausal osteoporosis is undetermined but a few facts are known. Maximum bone density is reached sometime around age 35. From that point until menopause, women lose bone density of .1%-.3% per year. After menopause, normal senile bone loss accelerates to .7%-1% per year. Despite the lack of estrogen receptors in bone, estrogen has a definite but indirect effect on bone density. Other studies have shown postmenopausal osteoporosis is a problem of bone remodeling and not of calcium homeostasis. Although a negative balance between phases of bone formation and bone resorption exists, histomorphology of iliac biopsies reveals a nonhomeogeneous group. Ten percent of the group shows increased remodeling, 30% show decreased osteoblastic activity and 60% have a histomorphologic picture indistinguishable from other nonosteoporotic patients.

Epidemiologic studies have yielded fairly consistent phenotypical features of senile (postmenopausal) osteoporosis. Females are more commonly involved than males. People of northwest European background are predisposed to the disease. Most patients are white. Slender people may be at greater risk

Dr. Sullivan is an orthopedic surgeon in private practice in Des Moines.

because obese people have higher levels of circulating estrogen. Other common features include a fair complexion, freckles, blond hair, hypermobility, scoliosis and inactivity. It is estimated 15% of the white women over age 65 have the disease.

Osteoporosis can cause significant morbidity. Because of the accelerated loss of bone density, the osteoporotic patient is at much greater risk for fracture. Most osteoporotic patients fall below a certain bone density, i.e., fracture threshold. This critical bone density is one of several variables that determine fracture risk. The likelihood of reaching the fracture threshold depends on the maximal amount of bone density achieved, the rate of bone loss and the length of time over which this loss is maintained. Estimates show by age 80, 50% of white females suffer a crush or wedge vertebral fracture. By age 90, one-third of white females suffer a hip fracture. Hip fractures in this age group carry a mortality rate of 40% to 70% 1 to 2 years post fracture. Acute care cost for osteoporotic hip fractures is over \$3 billion per year. The wrist is the third common site predisposed to fracture in osteoporotics.

Diagnosis

Laboratory tests in postmenopausal osteoporosis are usually unremarkable. Histomorphology of the transiliac bone biopsies aids in understanding the dynamics of a case and helps rule out other contributing causes.

There are many noninvasive means of investigation. Radiographic evaluation is very imprecise and requires a 30% to 40% bone mass loss before osteopenia can be detected. Photodensitometry estimates bone mass from a measure of optical density, but this method does not compensate well for the soft tissue thicknesses in the region. Single photon absorptometry uses a nuclear counter to measure the attenuation of a monoenergetic beam by the bone through which it passes. Shortcomings of this technique include positional variability, region variability and the inability to adequately account for attenuation by soft tissues. One of the newer techniques is double photon absorptometry. This method accounts for soft tissue attenuation and can be applied to the axial and appendicular skeleton. However, this method is very expensive and not in wide use. Quantitative computerized tomography allows the same precision and ac-

curacy as a dual photon absorptometry, but cost and availability are similar shortcomings.

Treatment goals are curative and preventive. Curative measures deal with the morbidity of an osteoporotic fracture. A crush or wedge vertebral fracture should be managed with bedrest and analgesics for the first 5 to 10 days. After this, progressive mobilization should begin with the support of a soft lumbosacral corset. Most of these fractures heal in 2 to 3 months. However, each osteoporotic fracture contributes to the kyphotic posture of the spine. Walking in an upright position requires a compensatory increase in lumbar lordosis. Sometimes this results in postural low back pain. The treatment is bedrest, anti-inflammatories and time. Treatment of Colles' fractures and hip fractures in an osteoporotic patient is the same as for a nonosteoporotic patient. Both have similar healing potentials, but osteoporotics have a higher rate of complications such as failure of fixation and malunion.

Treatment

Preventive treatment obviously requires identification of the susceptible group. The subgroup suffering their first osteoporotic fracture are easily identified and probably require preventive treatment to avoid future morbidity. Should we recommend prophylaxis or screening of others at risk to identify the subset most prone to the acute sequelae of osteoporosis? Recent studies suggest single photon absorptometry, dual photon absorptometry and quantitated computerized tomography can determine a critical bone density or fracture threshold below which the risk of fracture significantly increases. The question as to which does this best is undecided. Could the cost of massive screening be justified? Even if precise bone density information is obtainable, this is only one variable in a multifactorial fracture problem. In addition to determining absolute bone density, screening may help determine the rate of bone density loss, response to treatment and the efficacy of new treatments.

Prevention includes avoidance, exercise and supplementation. Excessive use of tobacco and alcohol should be avoided as they appear to have a deleterious effect on osteoblastic function. Also, corticosteroids inhibit bone formation.

(Please turn to page 10)

Recent studies have confirmed that mechanical stimulus provides osteoregulatory signals to the skeletal system. The magnitude of the strain (bend) induced by a mechanical stimulus helps regulate the regional amount of bone formation. These stimuli need to occur briefly but at recurrent intervals. The exact clinical exercise program to take advantage of this fact remains undetermined.

Current medical supplementation involves calcium, vitamin D, estrogen and sodium fluoride. The recommended dose of elemental calcium for a postmenopausal patient is 1.5 grams. Side effects of calcium are constipation and renal calculi. Estrogen should be contemplated for a patient for the first 5-10 years post menopause. The dose should be .625 mg. daily. Current suggestion is to use estrogen for 3 weeks followed by 10 mg. Provera per day for the remainder of the month. This decreases possible side effects of estrogen including increased risk of uterine cancer, stroke and thrombus. Vitamin D has been recommended in the dose of 400 to 800 international units per day to help treat any unrecognized, associated osteomalacia that coexist in a significant number of postmenopausal osteoporotic patients.

Estrogen, vitamin D and calcium have been shown to decrease the rate of bone loss. However, sodium fluoride must be used to increase bone accretion. Sodium fluoride should only be used after a significant period of calcium and vitamin D administration to treat any osteomalacia component. Otherwise, the unmineralized portion of osteoid will be worsened by the sodium fluoride treatment. A suggested dose of sodium fluoride is 1 mg. per kg. per day in divided doses. (Usage of sodium fluoride is not yet approved by the F.D.A.) Known side effects are nausea, vomiting and arthralgias. These are usually self-limiting. Suggested usage is 2 years after the last spinal fracture, since it takes 1 to 2 years to get maximal bone accretion from the sodium fluoride therapy. Physiologic doses of calcium and vitamin D should be continued indefinitely. Calcitonin and anabolic steroids might hold promise for future treatment programs.

References

References are available either from the author or the editors of IOWA MEDICINE.



BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that the simultaneous administration of CARAFATE with tetracycline, phenytoin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. The clinical significance of these animal studies is yet to be defined.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No evidence of drug-related tumorigenicity was found in chronic oral toxicity studies of 24 months' duration conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies have not been conducted.

Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients, adverse effects were reported in 121 (4.7%). Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

CARAFATE (sucralfate) 1-gm pink tablets are supplied in bottles of 100 and in Unit Dose Identification Paks of 100. The tablets are embossed with MARION/1712. Issued 3/84

References:

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Premenstrual Syndrome

SUSAN R. JOHNSON, M.D.
Iowa City, Iowa

Close to 85% of reproductive age women have various premenstrual symptoms following ovulation, with 5% of women experiencing symptoms severe enough to interfere with their ability to function. The author discusses diagnosis and possible treatments for premenstrual syndrome, or PMS.

PREMENSTRUAL SYMPTOMS, both negative (described in this article) and positive (increased energy and libido) are common in ovulating women. Only about 15% of reproductive age women do not experience changes during the luteal phase. The term Premenstrual Syndrome (PMS) is used only when the symptoms interfere with ability to function in personal relationships and/or work. When this severity criteria is used, only about 5% of women in the reproductive years experience severe premenstrual symptoms; 15-20% experience symptoms of a moderate nature.

The etiology of premenstrual symptoms is not yet defined. Originally, abnormal levels of peripherally produced progesterone were the main suspect. However, careful studies of estrogen/progesterone levels have failed to

identify a difference between women with and without PMS. More recent theories involve alterations of neurotransmitters in the central nervous system, principally in the hypothalamus. Despite uncertainty over the precise changes, there is growing consensus that the underlying cause of PMS is physiologic rather than psychologic or cultural.

What Is PMS?

PMS is defined as adverse symptoms occurring during the luteal (premenstrual) phase, followed by a postmenstrual symptom free period. Several aspects of this definition are important for diagnosis. The syndrome includes a variety of physical (e.g., breast tenderness, appetite changes, bloating) and emotional (e.g., irritability, depression, mood swings, crying spells) symptoms. The symptoms are present only during the luteal phase; for most women this will be up to 14 days before the onset of menses. The symptoms should be absent in the postmenstrual phase. Although the symptoms will often disappear immediately with the onset of bleeding, they may persist 1 or 2 days into the menstrual flow.

Premenstrual syndrome should be distinguished from dysmenorrhea (menstrual cramps). Although there are some symptoms which may occur with either syndrome, the primary symptom of dysmenorrhea is cramping. It occurs primarily during the first 24-48 hours of the menstrual flow.

The diagnosis of PMS should be based on a careful history which documents the symptom complex and defines its duration, severity and functional effect. Physical examination serves primarily to exclude other conditions.

The author is an associate professor in the department of obstetrics and gynecology at University of Iowa Hospitals and Clinics in Iowa City.

There are no laboratory tests of specific value in the diagnosis of PMS. An occasional woman may have symptoms suggestive of hypothyroidism, in which case thyroid function studies should be obtained. Measuring progesterone and estrogen levels is of no value in diagnosing PMS.

The most important aspect of diagnosing PMS is examining a prospectively recorded chart of symptoms kept for at least 3 months. The easiest way to do this is to have the patient choose 5 or 6 significant symptoms and keep a daily record of their presence or absence. She should also record the dates of her menstrual periods. The clinician can then accurately determine the timing pattern of the symptoms. If it fits the pattern described above, PMS may be present. If the symptoms are present on a daily basis and only worsen premenstrually, other problems should be considered.

PMS and Depressive Illness

The most common condition to be considered in the differential diagnosis of PMS is depressive illness. These 2 syndromes can have similar symptoms, but the pattern differs. The symptoms of depressive illness will be present every day. Confusion can result, however, because depressive illness can sometimes worsen during the luteal phase. Careful attention to charting symptoms will often clarify the situation. In addition, physical symptoms tend to be much less common in depressive illness. Psychiatric consultation should be obtained when necessary. Women with severe physical complaints should have each of these evaluated, considering the appropriate differential diagnosis for that symptom. However, it is unusual to find organic physical illness in this group of women.

Most women with premenstrual symptoms will not require medication. The first step in the management of PMS is informing the patient her problem seems to be related to the menstrual cycle and not to an underlying psychiatric problem. Many women are concerned they are "going crazy" and will be very reassured. Several self-help measures are of value. The scientific basis for these measures is not completely understood, but in practice they are of benefit. We recommend a balanced, healthy diet which deemphasizes salt, alcohol, sugar and caffeine. We encourage a program

of regular, moderate, aerobic exercise. Brisk walking 2 miles a day, 4 days a week should be sufficient. It is clear external stressors can interact with premenstrual symptoms. Women should be encouraged to identify and reduce stresses at work and home. Counseling to help the woman deal with problems causing stress may be helpful. When possible, the husband or partner should be involved to provide support.

Vitamin therapy is commonly recommended for the treatment of PMS, but its actual benefits are unclear. However, we often recommend a trial of a modest dose of Vitamin B₆ (no more than 100 mg per day) for 3 months. It should be continued only if it is beneficial. Because large doses of Vitamin B₆ have resulted in peripheral neurotoxicity, the woman should be told not to increase the dose on her own. There is no evidence multiple vitamin preparations are of greater benefit than Vitamin B₆ alone and they are considerably more expensive.

Drug Therapy

For the small portion of women who fail to respond to these measures, drug therapy can be considered. As yet, there is no single agent that is universally helpful in the treatment of PMS. Although many clinical trials of various agents have been performed, the results are often difficult to interpret because of methodologic problems. Most clinicians select drug therapy from a small group of medications that have been anecdotally useful in clinical practice.

We currently use the following: Prostaglandin inhibitors (e.g., Ibuprofen 600 mg t.i.d. during the luteal phase), natural progesterone supplementation and spironolactone. In women who fail to respond to any of these drugs, a trial of ovulation suppression with either a progestin or danazol is used. All these drugs can have side-effects and are not inexpensive, so their use should be restricted to women who fail to respond to self-help measures.

The question may be raised regarding the value of a hysterectomy with bilateral oophorectomy. Surgical therapy is unnecessary in the vast majority of women with PMS. Surgery may occasionally be considered in women with severe symptoms, but only if the women have

responded to a trial of ovulation suppression with either a progestin or danazol for a minimum of 4 to 6 months. Generally, fewer than 1 in 100 women with PMS should be considered for surgical therapy.

The days when a woman is told the symptoms are "all in her head" and she will have to "learn to live with them" are past. Women who complain of premenstrual symptoms deserve a careful evaluation and attempt at diagnosis. For the majority, understanding the problem and improving overall health with diet, exercise and stress reduction will provide sufficient benefit. For the few with severe disabling symptoms, relief can often be provided with drug therapy.

"Foreign" Doctors

A FEW WEEKS AGO, an invitation was received in the mail to attend a medical educational conference in Phoenix on "The Future of Brachytherapy." Aside from the fact that some of us don't know what brachytherapy is, we were struck by the unusual names of a majority of the guest faculty: Anatoly Dritschilo, Albino Flores, Arnold Herskovic, Al Korba, Alvaro Martinez, P. J. Navati, Ravinder Nath, Dattatreya Nori, and Zbigniew Petrovich — all doctors from highly respected medical centers in this country (except one from Vancouver, British Columbia).

What kind of names are those? Where are the good old Anglo-Saxon and Celtic names — the Smiths, the Mayos, the Petersons, the O'Briens? What's going on here, anyway?

Well this is what's going on: We are being reminded, once again, that this country of ours is still true to its heritage. Ours is the great "melting pot." We continue to receive infusions of ethnic diversity from all of the countries of the world. Therein lies one of our greatest strengths.

It has been the good fortune of the medical profession in recent years to be the beneficiary of many of these new Americans, these talented "foreigners." They bring credit and add distinction to our profession. — DANIEL F. CROWLEY, M.D.

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Donna M. Drees, M.D.

Questions and Answers



For Women Only

Charter Women's Center in Des Moines is the first comprehensive clinic of its kind in Iowa and one of only about 12 in the country. Here, the Center's medical director — a Des Moines family practice physician — discusses this well-received new approach to women's health care.

Give us some background on how the Charter Women's Center was born.

Late in 1985, Charter Community Hospital decided to establish a medical and health services center for women, staffed by women. The Center opened in mid-August, 1986.

The decision was supported by marketing studies and the services of Sally Rynne, president of Women's Health Care Consultants and director of Chicago's Women's Health Resources. Women's Health Resources was the first freestanding hospital-sponsored women's health center in the country and continues to be a national model.

As medical director for the Charter Women's Center, I worked closely with Charter administrators and staff in the Center's development. I continue to provide direction and advice.

What is the purpose behind a medical center devoted solely to women?

The Center is representative of a national trend in women's health care caused by changes in the health care industry and consumer needs and demands.

The women's health movement and the holistic health movement of the 1970's called for a more participatory, prevention-focused, interdisciplinary approach to health care. There was a growing recognition of women's unique health care needs.

Finally, as new regulations emptied hospital beds, hospitals turned to marketing research for direction. Women were identified as the most important health care consumers and the health care decision makers for their families.

What is the Center's approach to women's health care?

The Center has a multi-disciplinary, team approach. The staff includes an internal medicine physician for primary care, a registered dietician for nutritional counseling, a nurse practitioner for routine well-woman care, therapists for counseling services and a fitness specialist for evaluations and exercise prescriptions.

These professionals develop and offer the Center's wellness programs on women and weight control, PMS management and stress management. The wellness programs utilize the Center's staff to offer coordinated treatment that integrates physiology, diet, exercise and mental health concerns for women. The team approach is the focus, but the Center's clients may see any staff member exclusively. For example, physicians from other offices will often refer patients to the Center's dietitian or therapist.

Is the Center involved with health education activities?

A major emphasis is provision of health information and educational programming. The Center offers public workshops, seminars, wellness programs and fitness classes. We also provide in-house contract programs for business and industry in the Des Moines area. In our first year, over 500 people participated in these programs.

We also maintain a small public library of books, journals, newsletters and brochures devoted to women's health issues.

What has been the reaction to the Center so far?

Terrific! Charter Women's Center clients complete evaluation forms at the end of each visit and educational program. These responses show a 100% satisfaction rate and complimentary remarks on all aspects of the Center. We have enjoyed excellent community support and interest, especially from our community advisory committee and local media.

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Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

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Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

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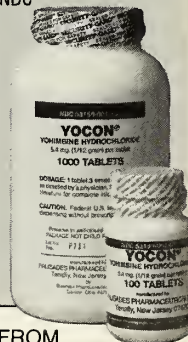
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

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Fallopian Tube Implantation For Treatment of Mullerian Anomalies and Infertility

LANE A. REEVES, M.D.

Waterloo, Iowa

Surgery plays an important role in treatment of reproductive problems in women. The author discusses new reproductive technologies and presents a case report involving successful surgical treatment of a mullerian anomaly.

THE PAST DECADE HAS SEEN many advances in reproductive medicine. Gynecologic microsurgery has come of age and surgeons have clearly documented improved conception rates resulting from new surgical techniques in conjunction with adherence to Halstedian principles. There are reports of 70-75% pregnancy rates following tubal reanastomosis for reversal of some sterilization procedures and pregnancy rates of 60% following salpingo-ovariectomy for encapsulating periadnexal adhesions.^{1, 2}

Dr. Reeves is a specialist in gynecology and reproductive endocrinology. He is in private practice in Waterloo.

Several new reproductive technologies have generated interest among the medical profession and public. The first such technique was in-vitro fertilization (IVF). Couples with severe tubal disease, absent tubes, endometriosis or oligozoospermia can often conceive through IVF. The better centers report IVF conception rates of 20-25% per treatment cycle.³ This rate and significant patient cost for an IVF treatment cycle limit wide-spread application of IVF technology.

Gamete Intrafallopian Transfer (GIFT) is another new reproductive technology. GIFT involves using an ovulation inducing agent, usually human menopausal gonadotropins (Pergonal), to stimulate follicular development. When pelvic sonography and serum estradiol levels indicate ovulation is imminent, a laparoscopy is performed and oocytes are needle aspirated from the ovaries. The patient's husband concomitantly submits a semen sample and, after sperm preparation, spermatozoa and oocytes are laparoscopically introduced into the distal fallopian tube by means of a small polyethylene catheter. Thus far, only limited patient series have been reported, but one group has reported a 48% pregnancy rate.⁴

Another new technology is nonsurgical ovum transfer. The procedure is indicated for patients who have a uterus but no ovaries, or

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Figure 1. Hysterosalpingogram demonstrating a left unicornate uterus and the intramural segment of the tube (arrow).

have a genetic defect which precludes attempts to conceive. Semen from the patient's husband is used to impregnate an ovum donor. During the conceptional week, transcervical uterine lavage is performed to remove the embryo from the uterus of the ovum donor so it can be implanted into the patient's uterus. The technique is new and has been utilized by only a few couples.

With the advent of new technologies, some clinicians predicted tubal reconstructive surgery would become a less important aspect of treatment of infertility. It appears the prediction was inaccurate. During the past 10 years there has been a significant increase in the demand for reproductive surgery. Rapid increases in the incidence of sexually transmitted diseases and an apparent increase in the frequency of endometriosis have contributed to the need for surgical correction of reproductive problems.

Most tubal diseases are approached through the application of microsurgical techniques. Treatment of a hydrosalpinx and distal tubal obstruction requires a salpingoneostomy. Uterotubal junction (UTJ) obstruction is also common and presents a difficult surgical challenge. Salpingitis isthmica nodosa, or endometriosis of the intramural portion of the fallopian tube, often causes UTJ obstruction.

Infection and subsequent inflammation can result in obstruction.⁵ UTJ obstruction can usually be corrected by progressively resecting the isthmic and intramural segments of the fallopian tube. When a patent proximal tubal segment has been identified, it is microsurgically anastomosed to the distal tubal segment.

Gomel recently reported a patient who had a unicornate uterus and had previously undergone a unilateral salpingectomy. He transposed the contralateral tube, which was not in proximity to the uterus, and performed a microsurgical cornual-ampullary tubal anastomosis with resultant pregnancy.⁶ If UTJ obstruction cannot be corrected by microsurgical reanastomosis, the reproductive surgeon may resort to tubal implantation. Tubal resection and reanastomosis is the procedure of choice since it provides better pregnancy results than tubal implantation. Numerous authors have reported post-implantation pregnancy rates of approximately 40%.^{7, 8} This case report is presented to demonstrate the potential of reconstructive surgery to restore fertility in a woman with unusual pelvic anatomy and multifactorial infertility.

Case Report

A 29-year-old 0-1-2-0 Caucasian woman was referred for evaluation of secondary infertility. At age 19 the patient delivered a 24-week stillborn infant with congenital anomalies. A uterine curettage was performed the day of delivery. At age 20 she spontaneously aborted at 12 weeks gestation and a D&C was performed. At age 21 the patient was found to have a left tubal ectopic pregnancy and was treated by total salpingectomy. She was told the remaining reproductive organs were normal and she would soon conceive.

Investigation

An initial hysterosalpingogram suggested a left uterus unicornis. A short intramural segment of fallopian tube could be visualized (Figure 1). Serial timed endometrial biopsies histologically confirmed the presence of a luteal phase defect. An excretory urogram was normal. A post-coital test and a semenogram were normal. Basal body temperatures suggested she was ovulating regularly. The following studies were normal: ANA titer, toxoplasmin C-F, cytomegalic inclusion disease titers,

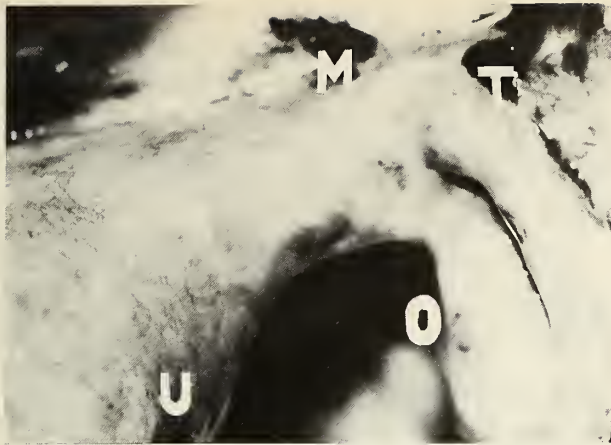


Figure 2. U-Uterus, M-Mullerian anlage, T-Right tube, O-Right ovary.



Figure 3. Patent right fallopian tube with spillage of water-based radio-opaque media into peritoneal cavity.

herpes culture, TSH, T-4, direct and indirect Coombs tests, karyotypes by the patient and her husband. The endocervical canal would not admit a #5 Hegar dilator.

In October 1983, a hysteroscopy-laparoscopy was performed. The uterine cavity was deviated laterally and was fusiform. The tubal ostium was visualized. The laparoscopy revealed American Fertility Society stage I (minimal) peritoneal endometriosis. The entire left tube was absent. Both ovaries and round ligaments appeared normal and omental-left cornual adhesions were present. The right mullerian anlage was represented by a 2 X 2 centimeter nodule of tissue which was confluent with the right aspect of the uterine corpus. A 7 centimeter segment of normal appearing fallopian tube was connected to the lateral aspect of the rudimentary right hemi-uterus. The midampulla of the right fallopian tube was adherent to the right ovary. It was apparent the right tube could not be satisfactorily mobilized to permit its anastomosis to the remaining intramural segment of the left tube (Figure 2).

Surgical Procedure

After appropriate counseling of the couple, reconstructive surgery was undertaken in December, 1983. A laparotomy was performed and the adhesions and endometriosis were resected. The right mullerian anlage was resected. Histologic evaluation later confirmed the presence of myometrium with basilar endometrium. The fallopian tube was mobilized and patency was documented by chromoper-

tubation. A Reamer was used in order to create a tunnel through the full thickness of the right posterolateral uterine fundus. A polyethylene splint was inserted through the full length of the tube and a portion of the splint was left in the uterine cavity.¹ The splint helps maintain tubal immobilization during the healing process. The proximal fallopian tube was inserted into the uterine cavity and sutured in place. A modified Gilliam uterine suspension was performed.

The operative procedure was performed in accordance with the precepts of gynecologic microsurgery. Loupes were utilized for magnification. Tissues were handled with care and continuously irrigated with a physiologic solution. A delicate monopolar microelectrode was utilized for dissection and bipolar cautery forceps used to maintain hemostasis.

Post-operative care

The polyethylene splint (Shirodkar prosthesis) was left in place for 6 months following surgery. Barrier contraception was utilized. Due to the patient's prior endometriosis, danazol was administered. During the danazol therapy, monthly liver enzyme determinations were normal. Six months postoperatively the stent was removed transcervically and the danazol therapy was discontinued. A post-operative hysterosalpingogram was then obtained (Figure 3).

Barrier contraception was utilized for another 2 months, following which progesterone vaginal suppository therapy was initiated due

(Please turn to page 20)

to her luteal phase defect. During the first cycle of her progesterone supplementation, a timed endometrial biopsy demonstrated the endometrial histology was normal and in-phase. The patient conceived during her second cycle of progesterone therapy.

Obstetrical care

The patient's pregnancy was uneventful. Progesterone suppository therapy was continued until she was 8 weeks pregnant. When she was 20 weeks pregnant her obstetrician asked her to quit her job and she subsequently spent most of her time at rest. The patient spontaneously entered labor at 37 weeks gestation and vaginal delivery produced a normal 2540 gram female infant. The patient has again conceived and is now 13 weeks pregnant.

Summary

This is the report of a case of a surgically absent tube, mullerian anomaly, endome-

triosis, pelvic adhesions and a luteal phase defect. Successful treatment of reproductive problems often requires individualized therapy and multiple treatment modalities. Reproductive surgery continues to play an important role in the treatment of reproductive problems.

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Iowa Methodist Medical Center Female Breast Cancer Review: 1977-1985

RICHARD W. ADAMS, M.D. and
VICKI J. PHILBEN, M.D.
Des Moines, Iowa

Iowa physicians continue to educate the public about breast cancer. This article explores 1977-1985 breast cancer statistics from Iowa Methodist Medical Center in Des Moines. The authors discuss how Iowa's breast cancer epidemiology compares with the national picture.

BREAST CANCER STRIKES APPROXIMATELY 1 in 11 American women. Most medical literature on breast cancer comes from large research centers or nationwide studies, such as those done by the American College of Surgeons Commission on Cancer.^{1, 2} These may not always reflect the experience in Iowa. This article discusses breast cancer statistics from the past 9 years at Iowa Methodist Medical Center in Des Moines and compares those statistics with national findings.

Dr. Adams is associated with the Iowa Methodist Medical Center Department of Pathology. Dr. Philben is with the Department of Surgery at Iowa Methodist Medical Center.

Materials and Methods

A list of female breast cancer patients diagnosed and treated at Iowa Methodist Medical Center was provided by the Iowa Methodist Tumor Registry. Copies of the surgical pathology reports were obtained and reviewed. The surgical pathology report was examined for patient age, histologic classification, tumor size and axillary node status. Patients' charts were examined for information about quadrant location.

To see if breast tumors were diagnosed at an earlier stage from 1982-1985 compared to 1977-1981, pathology reports of patients diagnosed from 1982-1985 as having ductal carcinoma were examined for information on tumor size and axillary node status.

Results

Table 1 shows the age distribution of breast cancer patients: 4.7% of patients were under 40; 21.5% were under 50; 45.5% were between 50 and 69. Approximately one-third of patients were 70 or older.

Table 2 shows the location of the malignancies. There is a slight preference for the left breast. A total of 2.3% of patients presented with synchronous bilateral cancers. It is important to note 7 of the 10 patients had in situ carcinoma in the opposite breast while only 3 had invasive cancer bilaterally. Eighty percent of malignancies occurred in the outer quadrant or central breast.

TABLE 1
AGE AT FIRST DIAGNOSIS OF BREAST CANCER

30-39	20 (5%)
40-49	71 (17%)
50-59	100 (24%)
60-69	93 (22%)
70-79	89 (21%)
80-89	51 (11%)
TOTAL	424 (100%)

TABLE 2
LOCATION OF THE TUMOR

Right Breast	200
Left Breast	219
Right and Left	10
Upper Outer	218 (51%)
Lower Outer	53 (13%)
Central	46 (11%)
Upper Inner	53 (13%)
Lower Inner	49 (12%)

TABLE 3
MALIGNANT BREAST TUMORS 1977-1981

Infiltrating Ductal	318
Infiltrating Lobular	31
Ductal Carcinoma in Situ	27
Lobular Carcinoma in Situ	10
Medullary	13
Inflammatory	7
Infiltrating Ductal and Lobular Carcinoma in Situ	8
Infiltrating Ductal and Infiltrating Lobular	6
Others	18

TABLE 4
NODE INVOLVEMENT BY SIZE
**ALL UPPER OUTER, CENTRAL, LOWER OUTER, INFILTRATING
DUCTAL CARCINOMA**

Under 1.5 cm.	25%
1.5 cm.-2.0 cm.	30%
2.1 cm.-2.5 cm.	70%
2.6 cm.-3.0 cm.	50%
3.1 cm.-3.5 cm.	62%
Greater Than 3.6 cm.	62%

Table 3 shows the histologic classification of 438 breast malignancies for the years studied. Seventy-one percent of the tumors were pure infiltrating ductal carcinoma; 7% were pure infiltrating lobular. Eighty-two percent of breast malignancies have a ductal component if mixed categories are added to pure ductal types. Likewise, 13.5% of tumors had a lobular component, 2.9% of tumors were medullary and 1.4% were colloid type.

Papillary carcinoma and comedocarcinoma were very uncommon and are included in the ductal category, either in situ or invasive. There were only 3 papillary carcinomas during this time, 1 with limited stromal invasion and 2 in situ carcinomas.

Fifty-five percent of the ductal cancers were 2 cm. or less in diameter, while 45% were over 2 cm. The importance of this size category separation is shown in Table 4. This table relates percent of patients with positive axillary nodes to various tumor size increments. There was significant change in the percent of patients with positive nodes after the tumor exceeds 2 cm. in diameter. After exceeding 2 cm., size does not appear to relate to percent of patients with positive nodes. In this institution, there were very few tumors over 3.6 cm. in diameter. There were 7 patients with tumors over 5 cm. and 6 of these had positive axillary nodes (86%).

There were 411 women treated primarily for breast cancer at Iowa Methodist from 1982-1985. Where 55% of the tumors were less than 2 cm. from 1977-1981, only 48.4% of the tumors were 2 cm. or less from 1982-1985.

Discussion

The Iowa experience in the epidemiology of breast cancer is very similar to that of the nationwide studies and referral centers. In our study and the American College of Surgeons study, the peak age of breast cancer is from 50 to 69.² However, one third of new cases of breast cancer will occur in women over 70. Women in this age group will benefit from continued surveillance.

Breast cancer is slightly more prevalent in the left breast, both in our study and others.¹ The upper outer quadrant is the most common location.^{3, 4}

Studies in the U.S. and Europe have shown infiltrating ductal carcinoma is the most

common cell type.^{1, 5, 6} Seventy-one percent of patients in our study had a pure ductal component; 82% had a ductal component if mixed categories are added to pure ductal types.

Fifty-five percent of women newly diagnosed at Iowa Methodist had tumors less than 2 cm. in size. This is no better or worse than the 45% of tumors less than 2 cm. reported by the American College of Surgeons.^{1, 4} If a woman has a tumor less than 2 cm. (as measured by the pathologist) 5 and 10-year survival rates are 87% and 67% respectively.⁷ Larger tumors show progressively worse survival, even when axillary node metastases are not considered. The larger the tumor, the more likely the patient is to have axillary nodes which further lessen the chance of survival.^{2, 3} Even with greater availability of mammography and recent publicity about breast self examination, the percentage of tumors 2 cm. or less was only 48.5% from 1982-1985, compared to 55% from 1977-1981.

Iowa physicians and health care professionals must continue efforts to educate the

public about monthly breast self examination and yearly physical examinations by a health professional. American Cancer Society recommendations of mammography once every 1-2 years from age 40-50 and yearly mammography after age 50 should be strictly adhered to in an effort toward earlier diagnosis of breast cancer.

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Subclavian Vascular Access Through Area of Resected Clavicle

RICHARD L. LAWTON, M.D.
Des Moines, Iowa

The subclavian system has been successfully used for vascular access in treatment of acute renal failure for patients in whom conventional access sites have been exhausted. The author describes this operative procedure and how it can help patients on long-term dialysis.

SURGEONS ARE QUITE INNOVATIVE in establishing vascular access for dialysis, but the literature fails to reveal an instance of resection of the inner third of clavicle to facilitate access to the subclavian system.

The subclavian system may be approached percutaneously from the supraclavicular or infraclavicular route. This approach is feasible for initiation of dialysis, especially single needle, but usually requires the physician to place the catheters.^{1, 2} The approach is not without hazard, particularly via the infraclavicular area, and is not always successful.

Despite innovations in access over the past decade, there are problems with some patients on long-term dialysis. Some have been on treatment for over 2 decades, many for over 10 years. There are increasing numbers in the geriatric age group who may not be considered transplant prospects. It would be desirable to have access that is available for nurse placement and thus allow for careful planning of initiation of dialysis.

The operation can be done under local or general anesthesia. If "local" is used, the periosteum of the clavicle must be carefully anesthetized. Either side can be used. In the 2 instances reported here, the left side was selected. The incision should be made subclavicular to place it below the area of subsequent needle access to the subclavian system. This prevents excessive scarring in the area where the needles will be repeatedly placed. A flap of skin and subcutaneous tissue is elevated and retracted superiorly.

The anterior surface of the clavicle is subcutaneous and the supraclavicular nerves course on the deep fascia. The superior border at the inner-third offers attachment to the clavicular head of the sterno-cleido mastoid muscle. At the lower border some fibers of the pectoralis major muscle have their origin. These muscles are detached through their tendinous attachments extra-periosteally. The costo-clavicular ligament will be sectioned medially and inferiorly. The subclavian muscle will be seen either behind or in front of the costo-clavicular ligament, and sectioned.

Dr. Lawton is section chief of general surgery at Veterans Administration Medical Center in Des Moines and a clinical professor of surgery at University of Iowa Hospitals and Clinics in Iowa City.

The joint is opened on the anterior aspect revealing the intra-articular cartilage. Section of inter-clavicular ligament will allow visualization of the joint. The clavicle can be dislocated from the joint and the remaining joint capsule sectioned with scissors. The clavicle is dissected extra-periosteally to prevent regrowth of bone. It must be detached from the inter-clavicular ligament and the joint capsule. Care should be exercised in the extra-periosteal dissection because the subclavian vein is immediately behind the sternoclavicular articulation.

The clavicle is sectioned at the junction of the middle and inner-third with the Gigli saw after thoroughly anesthetizing the periosteum. The Gigli cut is beveled to avoid a bony prominence under the skin. After resection of the clavicle, the venous structures pulsate with cardiac contractions and respiration. The skin and subcutaneous tissue are closed in layers using absorbable polyglycolate suture to the subcutaneous tissues and fine nonabsorbable sutures to the skin. The skin may also be approximated with tape.

The areas are allowed to heal for approximately 3 weeks, after which the needle puncture of the subclavian or innominate vein can be accomplished with ease. Since a skin flap has been developed for exposure, many of the supraclavicular nerves may be cut leaving the area relatively anesthetic.

The operation has been performed on 2 patients. Usual sites of access had been exhausted, and both patients presented many complications. When unique access is considered, the patients are usually failing and poorly dialyzed. Both patients died of their disease after several months; however, access through the subclavian system was adequate. Placement of needles or catheters into the subclavian system is facilitated by a slight Trendelenburg position. This also discourages air embolus. When the patient is placed in head-down position there is a perceptible increase in fullness in the subclavian area. This is also detectable by palpation. Most of the dialyses were accomplished with a single needle technique. It is usually not necessary to use the Seldinger technique for catheter placement. The intra-cath type is used, introduced through a proper sized needle.

Sterile precautions are used for placement. After connection and stabilization of the

cannula a small mound of antiseptic ointment is placed around the catheter-cutaneous junction and a dry sterile dressing is applied. At the termination of dialysis the catheter is removed and slight pressure held over the opening. With the patient in semi-sitting position, bleeding is minimal.

Disability for the operation is slight. Function of the extremity is minimally compromised.³ The clavicle acts as a strut to help stabilize the upper extremity. It is the only connection of the extremity to the axial skeleton via sternum and ribs. The other connection of the extremity to the rib cage is through the scapulo-thoracic "virtual" joint. When man assumed the upright position, the hands were freed for precise and delicate work. This is partly possible by stabilizing the glenohumeral joint through the clavicle.

This technique can be used in patients in need of dialysis whose regular sites of access are exhausted. In addition to maintaining access, it is necessary to consider the availability of needle placement to the nursing team and the patient's decreased discomfort at the time of dialysis and during the procedure. As transplantation becomes more satisfactory, long-term dialysis will be less compelling.

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Marion E. Alberts, M.D.

The Editor Comments



Health Care for Women

IN RECENT YEARS there has been a tremendous increase in concern over women's health care. Impetus for these concerns has come from several sources. Needless to say, the great change in the position of women in our social structure has been a primary force. Women have a greater voice in social concerns and are on a more equal status with men. Some would immediately declare much more needs to be done, but that is not my major theme in this discussion.

A second major aspect of the change in women's health care has been the striking increase in the number of women physicians. Data from the American Medical Association reveals the number of women practicing medicine increased by more than 3 times that of the number of men. Women were 12% of the physician work force in 1980. By the end of 1985 they accounted for 15% of the total physician population.

Another facet of the changes in care of women evokes from data indicating women physicians, as a group, are young. By the end of 1985, 42% were under 35. Only 7 percent were 65 or older. Interestingly, nearly one-third of office-based male physicians were in the same age group.

These facts have had a definite impact upon the medical care women now receive. More women are entering specialties previously considered male domains. Eighty years ago, according to the AMA data, more than a third of the specialties of medicine had no women in training. In 1985 women were in all

but vascular surgery. Women today can relate more often to a professional person of their own sex if they desire to.

There has been criticism of male physicians' attitudes toward ailments peculiar to women. Such pronouncements must be relegated to individual instances rather than the

"Data from the American Medical Association reveals the number of women practicing medicine increased by more than 3 times that of the number of men."

general state of medical care. As times change and attitudes are revised it is easy to make broad statements about the past. Yet, it is evident there is increasing awareness in our profession that change is needed and is evolving in our social structure.

This issue of IOWA MEDICINE is concerned with these areas of medical care. Health care centers for women are emerging in Iowa. One of these centers is featured. Scientific presentations this month relate to medical issues peculiar to women. It is in the public, as well as the professional interest, that we address these most important changes in the provision of health care to women. Iowa maintains a high standard of medical care and shall continue this responsibility by keeping in step with social change.

This issue of IOWA MEDICINE is dedicated to the women in medicine and the provision of quality health care to the women in Iowa.
— M.E.A.

Richard M. Caplan, M.D.

CME Notebook



Alexis St. Martin Now Rests in Peace

IT WAS FUN, my little historical quest. Driving the superhighway from Quebec to Montreal, my wife and I turned onto a side road for a few kilometers to seek the town of St. Thomas and the church cemetery where Alexis St. Martin was buried in 1880 at age 86. We found the town on an exceedingly warm and sleepy afternoon "celebrating" in total summer passivity its 150th anniversary. The church, open but empty, proudly displayed its handsome renovation of 1983. As small town churches go, it was surprisingly opulent and "dressed up." Of much greater interest to me, though, was the plaque on the outer wall that faced the graveyard. The Canadian Physiological Society had placed it there in 1962 to commemorate the resting place of a man on whom a sort of greatness had been thrust.

In 1822 Alexis St. Martin, a young French-Canadian fur trapper, suffered an accidental gunshot wound to his left upper abdomen. That happened on Mackinac Island at the confluence of Lakes Michigan and Huron, where Dr. William Beaumont was stationed as an army surgeon. The story of St. Martin's survival and subsequent life make an absorbing story worthy of a niche in the professional

memory and identity of every physician. The tale has a romantic as well as heroic flavor. It could be developed as the plot for a soap opera: the kind ministrations of nature and Dr. Beaumont; the permanent fistulous opening into St. Martin's stomach; his begrudging acquiescence as a research subject for Dr. Beaumont, whose exceedingly clever and systematic investigations of gastric digestion have won him the title of "father of gastrointestinal physiology"; the complexities of the Beaumont-St. Martin relationship in the light of modern ethical discussions of autonomy and informed consent, and so on.

Dr. Beaumont next saw duty at Prairie du Chien, Wisconsin, across the Mississippi from McGregor/Marquette, Iowa. The Historical Society and the Medical Society of Wisconsin now operate at the military ruins a well-presented museum dealing with Beaumont and his times. After leaving the army, he settled downriver in St. Louis, Missouri, where he practiced until his death in 1853. In 1902 the St. Louis Medical Society invited the famous Dr. William Osler to journey from Baltimore to deliver a commemorative lecture about Beaumont. Osler on Beaumont makes interesting reading. In that essay I discovered that Osler, as a young faculty member in Montreal, learned of St. Martin's death in nearby St. Thomas and tried unsuccessfully to obtain the famous stomach as a specimen for the U.S. Army medical museum. Osler relates how the family of St. Martin, sharing the man's lifelong anger at Beaumont and the world for being so fascinated with his gastric fistula, and determined that no one should lay hands on it, stood guard

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

over the corpse for five days to insure its being well rotted, and then buried it eight feet deep in an unmarked grave.

And so it is that occasional visitors who know the story make their way a century later to this little cemetery. Such visits represent, I suppose, a continuing prurient interest in that important wound and the saga of St. Martin and Beaumont. The army remembers its frontier physiologist through William Beaumont Army Medical Center at El Paso, Texas. St. Martin's grave remains unmarked. Like visiting the Vienna Cemetery that contains the calcific remnants of Mozart in an unmarked pauper's grave, one goes to the church cemetery in St. Thomas in homage to the *dramatis personae* and the idea of their unusual role, so opportunistically important in the list of human and medical milestones.

One might think that St. Martin warrants memorialization in an eponym, as has occasionally happened with patients (witness

Hartnup's disease, Christmas disease, or Lou Gehrig disease) or with caregivers (Sister Joseph nodule, Hodgkin's disease). The vagaries of eponyms make a tale worth retelling some other time. But a persisting gastric fistula, suitable to be named "St. Martin's fistula," cannot in the face of modern surgical techniques ever occur again. The story must be remembered, then, in other ways. St. Martin's unhappy acceptance of a fate he could not alter — what was he to do other than say, "If I could do it all over again, I certainly wouldn't" — probably should not warrant hero-status. Yet the final words on the commemorative plaque seem well deserved: "Through his affliction he served all humanity." All of us who practice medicine owe an enormous debt to our own patients and other patients throughout history. Only they have made possible the acquiring of knowledge we employ each day. And without that knowledge we've no hope to exhibit the wisdom to which we aspire.



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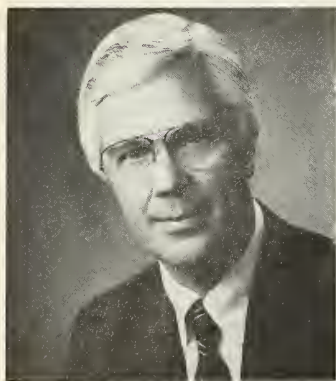
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The Federation of Organized Medicine . . . United



Alan R. Nelson, M.D.
Chairman
Board of Trustees
American Medical Association

I can give you over 113 billion good reasons to belong to the American Medical Association: Over \$113 billion which constitutes the health portion of the fiscal year 1987 Department of Health and Human Services budget.

Physicians and the patients we serve need a strong voice in how those dollars are spent to ensure that patient care, teaching, and research are adequately funded. The AMA is the best vehicle to achieve that needed voice.

Every physician is affected by the decisions made in Washington, D.C., regarding health care. Yet, less than half of the physicians in this country are AMA members.

Over 75% of IMS members support the AMA through membership. IMS sends delegates to AMA meetings twice each year to establish AMA policies. These delegates, representing your views, are the AMA. But we need to make our AMA as strong as it can possibly be if we are to save the health care system we have built, a system that is the envy of the world.

Medicine must unite with singleminded dedication to the goals which all physicians share — delivery of the highest quality of care, with the maximum access permitted by available resources.

We must stand together in our national professional association so that the AMA has the resources to carry out the urgent tasks that need to be accomplished, such as pursuing cost-effectiveness, ameliorating the professional liability crisis, improving physicians' image, and much, much more.

Just as the first responsibility of each physician is to the patient, we have a collective responsibility and vested interest in how our nation bridges the gap between the growing health needs of the American people and limited national resources.

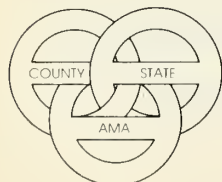
Because of the progressive "graying" of the population, the high cost of new technology, and other factors, the clinical, socioeconomic and political challenges facing America will only grow more challenging with time, making the responsibility of our profession to the American people progressively greater.

The AMA is the only organization capable of representing the entire spectrum of medicine at the national level. Its House of Delegates is now 406 members strong, representing all 50 states and the territories of Guam, Puerto Rico, and the Virgin Islands, 69 specialty organizations, hospital medical staffs, medical schools, young physicians, resident physicians and medical students and physicians in the military and public health services.

The AMA House is truly the Congress of American Medicine, and every physician in the country should be willing to give it support — support that becomes more crucial with each passing year.

In the face of burgeoning federal legislative and regulatory pressures, American medicine needs a strong, unified voice to enable you to strive to achieve the highest quality of patient care with a minimum of regulatory, legal, legislative, and bureaucratic constraint. In 1987, nearly 300,000 physicians and students made a commitment to strengthen that voice through AMA membership.

AMA membership has never been higher. A large share of the credit for this record membership level goes to the six unified states — Delaware, Illinois, Kansas, Mississippi, Oklahoma, and Virginia. If you want to make us stronger so we can serve you and your patients better, I ask you to make a commitment to unity in medicine through support of unification with the AMA. Let your IMS delegate know how you feel. It's too important to leave to others.



A handwritten signature in dark ink that reads 'Alan R. Nelson M.D.' The signature is fluid and cursive.

Alan R. Nelson, M.D.

Practice Management

Office Telephone Service — Making a Wise Choice

Editor's Note: Beginning this month, "Practice Management" will be a regular feature in IOWA MEDICINE. The column will explore topics pertinent to the business side of a medical practice.

WHEN CHOOSING AN OFFICE telecommunication service, it is critically important to be sure the system meets the unique requirements of the organization. There are some nearly consistent maxims. Therefore, it is interesting to encounter a situation which contradicts these maxims.

Choosing telephone systems for physicians' offices is one of these situations . . .

Broken Maxim #1: Usually, a busy signal for an incoming call means lost business. Most office telephone systems are designed to eliminate busy signals. The business has sufficient staff to take care of calls quickly so more calls can get in. This is not the case in many physicians' offices. It is possible a call is from a new patient, but physicians' offices generally cannot afford the staff necessary to handle the influx of calls during peak hours. Consequently, it is not desirable to have many lines coming into the system since a busy signal is generally better than ringing with no answer. So, the size of the telephone system is based on the size of the staff rather than on the anticipated volume of calls. However, the design must be adaptable to possible expansion of the practice.

Broken Maxim #2 — Obviously there are some calls you want to receive immediately. There must be an alternate route known to

those who need it. The answer is private lines from the hospital or separate unlisted telephone numbers for emergencies. However, a private line from the hospital telephone system can cost from \$40 to \$250 a month and will get limited use. (A standard telephone line costs from \$40 to \$70 a month.) Yet, it is usually a necessity.

Broken Maxim #3 — Telephones are cheap. Each telephone on a system will cost between \$500 to \$650. A system should last 7 to 10 years. The average cost per month for a telephone is less than \$6. It doesn't make sense *not* to put a telephone where it is needed.

There are different rules for examination rooms. Patients expect to have your undivided attention. Yet, there are demands on your time that necessitate interruptions.

The best compromise is an intercom station that allows hands-free operation for emergency calls only. The staff can communicate with you under policies you control.

In some respects, physician office telephone systems resemble business systems:

- Cost is usually higher than it should be. Rates for long distance services have changed about every 6 months. Local line rates have been erratic. If you haven't made changes in your system over the last 2 years, you are spending too much.

- It is usually better to purchase the system outright or on lease/purchase, than to rent. Since 1984, AT&T has sold in-place equipment to users. Pay back time compared to rental can be only 9 months. However, you must be sure the equipment meets your needs. Most of the remaining rental equipment is obsolete.

Deregulation of the telephone industry did not make managing your telephone system easier. The responsibility of managing your telecommunications costs were transferred from the telephone company to you. If you use the new services and equipment, you can generally keep the cost in line and retain or gain the best service possible.

This article is authored by Mack Manning, who is associated with the telecommunications consulting group of McGladrey, Hendrickson and Pullen in Des Moines, Iowa.

Iowa Department of Public Health

Radiation Protection In Iowa

COMPREHENSIVE REGULATION of x-ray machines or radioactive materials in Iowa became effective January 1, 1979, with enactment of "Radiation Emitting Equipment" legislation. The law requires the Iowa Department of Public Health (IDPH) to insure safe installation, operation and use of radiation emitting equipment through rulemaking, registration and inspection. Radiation emitting equipment includes sources of ionizing radiation such as x-ray machines, accelerators, radium and accelerator-produced radioactive material not under the jurisdiction of the U.S. Nuclear Regulatory Commission (NRC).

The IDPH established a radiation control program in July 1979 and promulgated rules which became effective in July 1980. Although Iowa made a belated appearance on the radiation control regulatory scene, the program did profit from knowledge gained by other federal, state and local radiation control programs. In fact, the rules Iowa adopted were extracted from recommendations developed by the National Conference of Radiation Control Program Directors, Inc., reflecting several decades of experience. These rules address safety requirements associated with ionizing radiation emitting equipment. They also include stipulations regarding maximum exposure levels, operating procedures, safety instructions, warnings and radiation worker and patient protection.

Registration and Inspection Of Radiation Machines

As of July 1, 1987, approximately 2,600 proprietors of 5,800 healing arts x-ray machines registered their equipment with the Ra-

diological Health Section (RHS) of the department. Ninety percent of registrations are from healing arts users — private practitioners, hospitals, educational institutions, industries and government agencies. Additional registrations include 80 facilities employing nonhealing arts radiation machines and 30 proprietors of particle accelerators.

The RHS also conducts comprehensive inspections throughout the state. The radiation emitting equipment inspected consists almost entirely of diagnostic x-ray machines employed in the healing arts. As of July 1, 1987, the RHS had inspected over 60% of x-ray tubes. Major emphasis was given to equipment which might pose the greatest risk to public health either because of the equipment's antiquity or improper use.

Approximately 15% of the units inspected possess major items of noncompliance. The problems identified include the absence of a means to limit the useful beam of the x-ray to the portion of the patient's body which is of clinical interest and the absence of operator protection from radiation exposure.

Almost 65% of the units inspected were in noncompliance with rules of lesser public health concern. In most cases, minor violations can be rectified by establishing safety procedures and other instructional guidance to the operator or by adjusting and calibrating equipment. All noncompliant equipment identified has been or is in the process of being corrected.

Healing Arts Screening

Healing arts screening can be defined as the intentional exposure of individuals to x-ray for diagnostic purposes without the specific and individual order of a licensed practitioner of the healing arts. The Iowa Administrative Code permits only those screening practices which have been approved by IDPH.

This information on public health is furnished and sponsored by the Iowa Department of Public Health.

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ceptible strains of *Staphylococcus aureus* and/or
 β -hemolytic streptococci.

Bone infections caused by susceptible strains of
S aureus and/or *Proteus mirabilis*.

Genitourinary tract infections, including acute pros-
tititis, caused by susceptible strains of *Escherichia*
coli, *P mirabilis*, and *Klebsiella* sp.

Contraindication: Known allergy to cephalosporins.

Warnings: KEFTAB SHOULD BE ADMINISTERED
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SHOW PARTIAL CROSS-ALLERGENICITY. POSSI-
BLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with
virtually all broad-spectrum antibiotics. It must be
considered in differential diagnosis of antibiotic-
associated diarrhea. Colon flora is altered by broad-
spectrum antibiotic treatment, possibly resulting in
antibiotic-associated colitis.

Precautions:

- Discontinue Keftab in the event of allergic reac-
tions to it.
- Prolonged use may result in overgrowth of nonsus-
ceptible organisms.
- Positive direct Coombs' tests have been reported
during treatment with cephalosporins.
- Keftab should be administered cautiously in the
presence of markedly impaired renal function. Al-
though dosage adjustments in moderate to severe
renal impairment are usually not required, careful
clinical observation and laboratory studies should
be made.
- Broad-spectrum antibiotics should be prescribed
with caution in individuals with a history of gas-
trointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined
in pregnancy and lactation. Cephalexin is excreted
in mother's milk. Exercise caution in prescribing
Keftab for these patients.
- Safety and effectiveness in children have not been
established.

Adverse Reactions:

- *Gastrointestinal*, including diarrhea and, rarely, nau-
sea and vomiting. Transient hepatitis and chole-
static jaundice have been reported rarely.
- *Hypersensitivity* in the form of rash, urticaria, angio-
edema, and, rarely, erythema multiforme, Stevens-
Johnson syndrome, or toxic epidermal necrolysis.
- *Anaphylaxis* has been reported.
- *Other reactions* have included genital/anal pruri-
tus, genital moniliasis, vaginitis/vaginal discharge,
dizziness, fatigue, headache, eosinophilia, neutro-
penia, and thrombocytopenia; reversible interstitial
nephritis has been reported rarely.
- Cephalosporins have been implicated in trigger-
ing seizures, particularly in patients with renal
impairment.
- *Abnormalities in laboratory test results* included
slight elevations in aspartate aminotransferase
(AST, SGOT) and alanine aminotransferase (ALT,
SGPT). False-positive reactions for glucose in the
urine may occur with Benedict's or Fehling's solu-
tion and Clinitest® tablets but not with Tes-Tape®
(Glucose Enzymatic Test Strip, USP, Lilly).

IOWA DEPARTMENT OF PUBLIC HEALTH

(Continued from page 32)

Until the promulgation of these rules, no legal restriction against indiscriminate exposure to x-ray existed in Iowa. A number of large industrial employers were regularly hiring out-of-state mobile x-ray services to conduct annual chest x-ray examinations which were, in some cases, required by the employer or by a labor contract. Implementation of these regulatory provisions has significantly decreased unwarranted healing arts screening.

Current rules are intended to minimize, if not preclude, random and arbitrary screening. For instance, IDPH approval has been justified for chest x-ray screening of workers exposed to asbestos or silicon dusts.

X-ray examination at the discretion and prerogative of a licensed practitioner who needs radiographic information for diagnostic purposes is not healing arts screening and is not subject to restriction. This requirement hopefully serves to reduce unnecessary x-ray exposure to the public by reducing the number of x-rays taken for purposes of legal liability, insurance claims, workmen's compensation or where the probability of receiving a healing arts benefit is extremely remote.

Operator Training Requirements

"Minimum Training Standards for Diagnostic Radiographers" became effective January 1983. These standards apply to operators of diagnostic x-ray equipment employed in the healing arts other than dentistry or veterinary medicine. Licensed practitioners in medicine, osteopathy, chiropractic, podiatry and physician assistants under the provision of Iowa Code, Section 148C.1, also are exempt from these rules. These standards establish training requirements for 2 categories of diagnostic radiographers: general and limited. On January 1, 1987, fee provisions were added to the rules; on July 1, 1987, testing and continuing education requirements were added.

General diagnostic radiographers are those who may apply x-ray to any portion of the human body to obtain a radiograph. Successful completion of a 2-year training program (identical to what is necessary to obtain na-

tional certification) is required for the general category. The national examination taken by a general radiographer satisfies IDPH testing requirements. Those certified at the general category are required to obtain 24 clock hours of continuing education over a 2-year period.

The limited category includes individuals who radiograph specific portions of the human body (e.g., chests, extremities, etc.) or are in the practice of chiropractic or podiatry. Training programs for limited diagnostic radiographers must be specifically recognized by the IDPH: applicants take a departmental test and are required to take 12 clock hours of continuing education over a 2-year period.

Licensing and Inspection Of Radiation Material

The Iowa Code was amended in 1984, authorizing the Governor to enter into an agreement with the U. S. Nuclear Regulatory Commission (NRC), to give the state authority to license and inspect all persons possessing radioactive materials (RAM) in Iowa.

There are now approximately 200 RAM licensees in Iowa. The RHS, Bureau of Environmental Health, issues new licenses, renewals, amendments and performs periodic inspections of licensees. RAM is used widely in hospitals, industry, educational institutions, research facilities, medical vans, civil defense and by private physicians.

All license applicants are required to submit detailed information on their proposed activities for review by IDPH personnel prior to issuance of the license. The frequency of facility inspection varies depending on the type of license. All inspections are designed to provide a thorough review of the licensees' radiation safety programs as they relate to the health and safety of individuals. Inspections conducted have revealed only minor violations. Licensees in violation are required to submit to the IDPH a written plan to correct the violations. The IDPH may reinspect facilities to insure compliance. Most licensees have demonstrated their competence as it relates to safe use of RAM.

Specific information on the radiological health program is available from Donald A. Flater, Supervisor, Radiological Health Section, Iowa Department of Public Health, Lucas State Office Building, Des Moines, Iowa 50319-0075, 515/281-3478.

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November 1987 Morbidity Report

Disease	Nov. 1987 Total	1987 to Date	1986 to Date	Most Nov. Cases Reported From These Counties	Disease	Nov. 1987 Total	1987 to Date	1986 to Date	Most Nov. Cases Reported From These Counties
AIDS	3	34	19	NA	Malaria	1	6	1	Johnson
Amebiasis	2	35	51	Boone, Johnson	Meningitis				
Brucellosis	0	3	5		aseptic	7	73	57	Scattered
Chickenpox	340	8062	7070	Scattered	bacterial	9	78	83	Scattered
Campylobacter	26	274	344	Scattered	meningococcal	2	5	11	Dallas, Union
Cytomegalovirus	0	25	19		Mumps	24	438	50	Scattered
Eatons Agent					Pertussis	2	57	19	Mitchell, Polk
Infection	6	60	24	Scattered	Rabies in animals	23	254	177	Scattered
Encephalitis, viral	1	13	30	Allamakee	Reye Syndrome	0	0	0	
Erythema					Rheumatic Fever	0	3	6	
Infectiosum	2	889	262	Franklin, Linn	Rubella				
Gastroenteritis					(German				
(GIV)	2744	15992	15412	Scattered	measles)	0	1	1	
Giardiasis	36	396	371	Scattered	Measles	0	0	134	
Hepatitis, A	4	95	39	Black Hawk, Polk	Salmonellosis	15	170	279	Scattered
Hepatitis, B	2	103	82	Black Hawk, Lucas	Shigellosis	11	95	21	Scattered
Hepatitis, Non					Toxic Shock				
A-B	2	28	26	Clayton, Johnson	Syndrome	0	5	8	
Hepatitis					Tuberculosis				
type unspecified	1	7	1	Lee	total ill	2	40	46	Hardin, Woodbury
Herpes Simplex	99	1110	1177	Scattered	bact. pos.	3	39	42	Hardin, Poweshiek, Woodbury
Herpes Zoster	0	2	0		Typhoid Fever	0	0	1	
Histoplasmosis	3	16	20	Clayton, Marion, Polk	Venereal diseases				
Infectious					Gonorrhea	202	2715	3603	Scattered
mononucleosis	14	164	214	Scattered	Chlamydia	256	3307	2462	Scattered
Influenza,					Syphilis	1	26	9	Harrison
lab confirmed	0	67	247						
Influenza-like									
illness (URI)	3417	33653	80044	Scattered					
Legionellosis	0	10	14						

Other Non-Reportable Diseases: Enterovirus — 1, Dubuque; Ureaplasma Urealyticum — 2, Cerro Gordo; 2, Dubuque; 5, Johnson.

Recent Books

Edelson, Edward, 1987, *The ABC's of Prescription Drugs*, Doubleday and Company, Inc., New York, New York, \$12.95. A relatively small concise home reference guide to the most commonly prescribed drugs. The greater part of the book is devoted to various disease and drug profiles associated with their treatment. Brand and generic names are given; then, concisely there is further description of side effects, general precautions of use and interactions with other drugs. The consumer will find this book of interest.

Hager, Thomas and Kessler, Lauren, 1987, *Staying Young*, Facts on File Publications, New York, New York, \$17.95. Each organ-system has peculiarities of change with on-going years. This book looks at these changes system by system. Consideration is given to various possibilities by which natural changes may be modified.

Bernat, James L. and Vincent, Frederic R. M., 1987, *Neurology, Problems in Pregnancy Care*, Medical Economics Company, Oradell, New Jersey, Paperback, \$39.95. This new publication will serve as a practical office or bedside guide for the primary care physician when concerned with the more common neurologic complaints and disorders. Though not a comprehensive textbook of neurology, it will serve well on the hospital ward or in the office.

Medical News/Products and Programs

CONDOMS ARE NOT 100% EFFECTIVE —

Although the use of a condom can provide protection against infection with the AIDS virus, this protection is by no means complete, according to the report *Answers About AIDS*, published by the American Council on Science and Health (ACSH), an independent scientific organization. To obtain a copy of the report *Answers About AIDS*, send a self-addressed, stamped (66¢ postage), business-size (#10) envelope to AIDS Report, ACSH, 47 Maple St., Summit, New Jersey 07901.

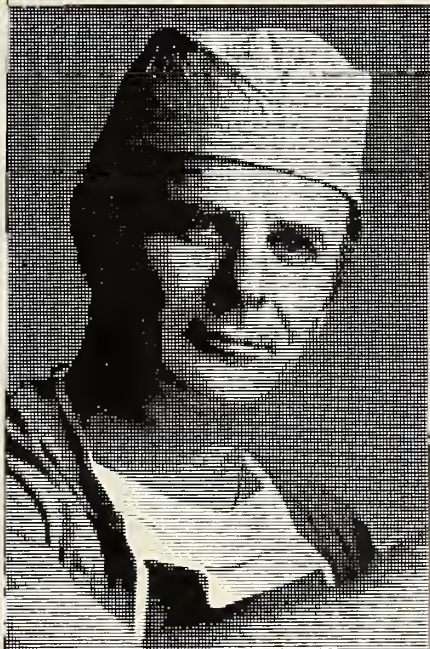
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About Iowa Physicians

Dr. Eileen M. Robb opened her medical practice in Monroe. Dr. Robb received the M.D. degree at George Washington University in Washington, D.C. and recently completed her residency in internal medicine at Kaiser Permanente Medical Center, Oakland, California. **Dr. Michael McCormick** will join the Bluff Medical Center in DeWitt. Dr. McCormick currently is practicing in California and will replace **Dr. Wallace Ash** who recently joined the McFarland Clinic in Slater. **Dr. B. J. Williamson**, longtime Keokuk physician, has retired from medical practice. Dr. Williamson received the M.D. degree at Northwestern University School of Medicine. He began medical practice in Keokuk in 1957. **Dr. Claire V. Lindholm** has retired following 35 years of practice

in Armstrong. Dr. Lindholm received the M.D. degree from the U. of I. College of Medicine. **Dr. Steve Sumey** will assume Dr. Lindholm's practice. Dr. Sumey received the M.D. degree from the University of Minnesota School of Medicine and completed his residency at University of Minnesota Hospital. Prior to locating in Armstrong, Dr. Sumey practiced family medicine in Windom, Minnesota. **Dr. Lawrence Magruder** has joined the Orange City clinic. Dr. Magruder received the M.D. degree from the University of Texas Medical Center, Galveston, Texas. **Dr. Robert W. Warner** has joined **Dr. John A. Okerbloom** at Heartland Oncology and Hematology in Council Bluffs. Dr. Warner received the M.D. degree at

(Please turn to page 44)



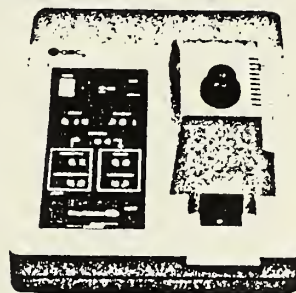
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ABOUT IOWA PHYSICIANS

(Continued from page 43)

Creighton University School of Medicine and completed his residency at Creighton University Hospitals. **Dr. Larry H. Boeke**, West Union, ended his 20 year practice at Palmer Memorial Hospital and the Gundersen Clinic to accept a position at Mercy Hospital in Cedar Rapids. **Dr. Mitch Bernstrom** has joined Medical Associates of Cedar Falls. Dr. Bernstrom received the M.D. degree at the University of Minnesota School of Medicine and served his residency at St. Joseph Mercy Hospital in Mason City. Also joining Medical Associates of Cedar Falls is **Dr. James C. Peterson**. Dr. Peterson received the M.D. degree at the U. of I. College of Medicine and served his residency at Scott Air Force Base in Illinois. **Dr. H. Warren Burk** has joined the Gundersen Clinic in

West Union. Dr. Burk received the M.D. degree from the University of Tennessee Medical School in Memphis and most recently was associated with the Synder Clinic, Winfield, Kansas.

Deaths

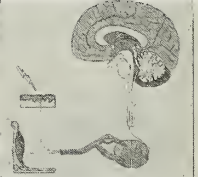

Dr. Felix T. Hach, 68, Las Vegas, Nevada, formerly of Ankeny, died October 25, 1987, at his home. Dr. Hach received his medical education in Germany and was affiliated with the Ankeny Medical Clinic for 30 years before retiring in 1982.

Dr. Deepak Bose, 28, Hamburg, died October 28, 1987, as a result of a car accident near Des Moines. Dr. Bose had been associated with Grape Community Hospital for three and one-half months. He received the M.D. degree at St. George's University School of Medicine.

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In the Public Interest

Women Physicians — The Numbers Grow

DO WOMEN PHYSICIANS possess unique characteristics which are affecting the practice of medicine? It may be too soon to tell, since women only recently began entering the profession in significant numbers.

According to a recent article in *AM News*, a "formula of frustration, ambition, compassion and brains is propelling women into every corner of the medical field." Indeed, statistics show they are entering medicine in record numbers. In 1967, only 7% of physicians in the U.S. were women. By 1985, close to 15% were women. Today, almost one-third of the nation's medical students are women.

Some women are gaining prominence in specialties such as women's health care, addiction disorders and geriatrics — areas that have not traditionally attracted males. Other women are crossing the last bastions into male-dominated specialties like surgery and medical academics. Internal medicine and obstetrics/gynecology are luring more women than other specialties.

Available information paints the following portrait of the 'typical' woman physician . . . She is 40 years old, 7 years younger than her average male counterpart. She is in a salaried position or in a private practice earning less than the typical male physician. Compared with male physicians, her patients are more likely to be young and more likely to be female. She spends more time with each one and is sued less often.

Many women physicians stress that their experiences, needs and concerns vary little from those of their male peers. However, some people believe women bring an inherently different and valuable perspective to mainstream medicine.

"The biological role of women as mother and caretaker cannot be completely ignored," comments Susan Rudd Wynn, M.D., head of an advisory panel for the AMA's Women in Medicine project. "Especially in primary care specialties, the experience a woman may have had raising children or caretaking a family contributes a great deal to her ability to deal with patients. In these days of high-tech, a more 'maternal' approach to patients is needed more than ever."

The experience a woman physician has as family caretaker has its negative aspect, too. Role strain — the result of what some call the 'Superwoman Syndrome' — is a documented phenomenon among women physicians.

Women, unlike men, worry from early in their medical training how they will integrate a family and a demanding career. Apparently, their worry is not unfounded. One study showed women physicians spend 90% as much time in their practices as men but also tend to assume full responsibility for home and family.

As more women enter the medical profession, organized medicine at the national and state levels will be better able to identify their professional needs and then offer appropriate support.

For women physicians and their patients, it's a good start.

January 1988

Iowa Medicine

President's Privilege



EMS Status Report

THIS ISSUE OF IOWA MEDICINE is dedicated to Iowa's emergency medical services.

We have seen a lot of changes in emergency medical services through the past 25 years. Emergency rooms evolved from a small area in the hospital handling only a few patients to a large area in the hospital handling many patients. The emergency room became an outpatient-emergency area. The number of real emergencies handled fell to 25-30% of an increasing total volume of patients seen.

The lifesaving equipment available in emergency rooms became sophisticated — the latest and best in the line. The attending physician was gradually displaced by the emergency room physician. Emergency room physicians ultimately formed their own specialty group.

Ambulance service in earlier times was provided by the local undertaker. This service involved transportation only. Soon we had ambulance services providing both transportation and treatment. The treatment was initially provided by first aid and rescue workers. Then along came basic EMTs, then EMT-Is and EMT-Ds and, finally, paramedics. Naturally, all this had to be regulated by laws and supervised by boards. Nothing became simpler but care became better.

This issue explores the current status of emergency medical services in Iowa. Physicians with an interest and expertise in emergency medicine discuss the EMS picture in rural and urban areas. Other experts discuss activities of the Iowa legislature with regard to EMS and the need for more funding.

The quality of Iowa's emergency medical services must be of concern to all Iowans, particularly physicians. We trust you will find our EMS update interesting and informative.

A handwritten signature in cursive script, reading "D J Walter M.D."

Dennis J. Walter, M.D.
President

Emergency Medical Services In Rural Iowa

DENNIS I. MALLORY, D.O.
Toledo, Iowa

The author discusses the state of emergency medical services in rural Iowa, focusing on the shortage of emergency medical technicians (EMTs) available for service.

MOST PREHOSPITAL MEDICAL CARE in Iowa is provided by community ambulance services with volunteer emergency medical technicians (EMTs). The "seed" monies of the 1973 Federal Emergency Medical Services Systems Act gave citizens in small towns the financial assistance to become EMTs. The cities are no longer providing stipends for EMT training and the expense is prohibitive. Therefore, fewer new EMTs are available for rural service.

The greatest asset of the rural ambulance service is the high motivation of the volunteer EMT. Many rural emergency medical services are plagued with EMT attrition. "Burnout" is common. Some EMTs move out of the community due to family or economic reasons.

The fear of legal action is a real concern for EMTs. The personal health risk of AIDS is

also a worry for the small town volunteers. Some EMTs have decided the rewards do not equal the criticism and the risk of lawsuits. Many ambulance services have discontinued operations because of lack of new certified EMTs and recertifiable EMTs.

There are medical protocols provided by community hospitals but direct medical control is sparse and often unavailable. Many pre-hospital services are trained by one hospital, transfer to another and operate with radio medical control through still another hospital. Policy formation and implementation from regional and state EMS associations is at best sporadic and usually nonexistent.

Ethical issues are very much a part of medicine in the rural setting. For example, transferring an obtunded nursing home patient to the hospital can be a nightmare for an EMT. The patient's family and physician may have decided not to resuscitate the patient. Then the patient has a cardiac arrest during the 20-mile ambulance trip and a family member directs the EMT to do everything possible. The EMT is faced with a difficult dilemma. Where is the written order and specific protocol?

I believe emergency medical services in rural Iowa can be improved by more physician participation. Just as the physician and patient should decide what is best for that patient, the physician must be involved in patients' pre-hospital care. The medical director of an ambulance service must be an advocate for the patient and the EMS team.

More financial support for EMS? Yes. Better standards of care and improved certifica-

Dr. Mallory is a family practice physician who specializes in emergency medicine. He is a member of the IMS Committee on Emergency Medical Services.

TABLE 1
TYPICAL CHARACTERISTICS OF PREHOSPITAL
ORIENTED MD¹

Dedicated	Energetic
Innovative	Infectious enthusiasm for EMS
Action-oriented	"Maverick" but well-respected
Non-traditional	Tactful
Willing to take risks	Diplomatic
Personal charisma	Low-key
Taste for adventure	Very flexible

tion agencies? Yes. But the most important component of the EMS system is the regular involvement of competent and highly motivated physicians.

Table 1 lists desirable personality traits for EMS medical control physicians. This list of EMS "super doctor" characteristics probably describes most rural primary care physicians.

With the relentless pressure from Congress and the insurance industry, control of

prehospital care will be given to medical bureaucrats rather than to physicians in the field. Because there is so much improvement needed in rural health care access, the small town family physician has an excellent opportunity to provide better care, teach, monitor and respond to the professional needs of the EMT. Risk management, quality assurance and case review should be ongoing in the EMS system. A physician medical director and advisor is best suited for these duties.

In order to have an effective EMS system, many needs must be met. The rural physician must meet the demands and responsibilities of medical director and medical advisor if the EMS system is to survive.

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1. Gunter, MJ, *et al*: Physician involvement: a critical factor in the development of community EMS. *Emergency Medical Services* May, 1979;48-61.

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Emergency Medical Services In Urban Iowa

G. LEON BERKLEY, D.O., F.A.C.E.P.

Des Moines, Iowa

The author traces the historical development of emergency medical services in Iowa's urban areas, discusses the current EMS picture in Iowa cities and makes suggestions for the direction these services should take in the future.

WHEN I WAS ASKED to write an article about emergency medical services in urban Iowa, my first impulse was to discuss pre-hospital emergency medical care in Des Moines since I practice in Des Moines and was involved with early development of the pre-hospital advanced care system. However, emergency medical care does not stop at the emergency department door and Des Moines is not the only Iowa city providing quality emergency medical services. This article discusses the EMS picture in our cities — how we got where we are and the direction we should take in the future.

EMS History

Before state regulations were enacted, local funeral homes transported ill or injured

patients to the nearest hospital or physician's office. The primary objective was to get the patient to the closest medical facility as quickly as possible. This resulted in untrained or poorly trained personnel transporting patients in inadequately equipped vehicles. At the hospital, patients were initially seen by interns with little experience and few advanced care skills required to care for the acute patient. Medical or surgical specialists were called to see the patient, depending on the patient's particular needs.

It became obvious changes were needed, and separate ambulance services were developed. These services provided rapid transport by individuals with some first aid training. There was also more equipment available for the transfer. A second change was full-time

"As these physicians assumed more responsibility for patient care in the emergency department, it became evident even further changes were required in the pre-hospital setting."

emergency department coverage by licensed physicians with a special interest in caring for the acutely ill or injured patient.

As these physicians assumed more responsibility for patient care in the emergency department, it became evident even further changes were required in the pre-hospital setting. The Emergency Medical Services Act of 1973 made these changes possible. This law

Dr. Berkley is president of the Iowa Chapter, American College of Emergency Physicians and a member of the IMS Committee on Emergency Medical Services. He practices at Mercy Hospital in Des Moines.

allowed advanced treatment in the pre-hospital setting by qualified individuals. This resulted in the training of the EMT (Emergency Medical Technician) on several levels: EMT-I (evaluate the patient and provide an IV access if required); EMT-II (more training and ability to evaluate the patient and provide an IV access, airway control and administer limited medications to the patient); and EMT-Paramedic (even more training and ability to evaluate the patient, provide IV access, advanced airway control and administer a wider spectrum of authorized medications to the patients). Since then, another level of training and emergency medical care has been created, that of EMT-D. An EMT-D may use an automatic or manual defibrillator to attempt conversion of ventricular fibrillation in the acute cardiac patient.

Specific training centers have since been developed to provide large numbers of highly trained advanced EMTs and paramedics. At the same time, the knowledge and capability of emergency room physicians grew. The American College of Emergency Physicians was developed and began providing continuing education for its members and other interested physicians. Board certification exams were developed and fellow status offered to qualifying physicians. Residency training programs were also developed specifically for training in emergency medicine. While these developments were taking place, other specialists — specifically members of the American College of Surgeons — were investigating trauma, a primary cause of death in the United States. As a result, the concept of trauma centers was born. These centers are hospitals with a specific interest in the care of the traumatized patient and the medical staff and facilities to provide that care. The A.C.S. then developed minimum requirements for designating trauma centers at levels I, II and III depending upon the surgical staff capabilities and the facilities available at a given institution.

EMS Today

All of Iowa's major metropolitan areas now have advanced EMT-Ps or paramedics. In most cases they are the primary responders to a call for pre-hospital medical care. In some cases (such as in Des Moines suburbs), they act as secondary responders to the primary EMT-I,

EMT-ID or EMT-D responders. The EMT-I, EMT-ID or EMT-D at the scene gives the patient the level of care which can be provided by that particular service. If the initial responders determine a higher level of service is required, they contact a paramedic service for a tiered or secondary response. In many cases, the paramedic service has already been contacted and the EMT-P is proceeding to the scene. Additional care required which can be provided by the paramedics is then initiated.

The patient is then transferred to the hospital in a large, well equipped vehicle with the advanced EMT contacting the receiving hos-

"Further geographic expansion of the EMT-P services will be needed to provide paramedic first responders to all urban Iowa residents in need of pre-hospital emergency medical care."

pital or medical resource hospital via radio communication systems for further direction. These orders may come directly from the physician or from specially trained nurses known as physician designees. If the patient's condition requires specialty trauma teams, the patient may be transported to a trauma center or hospital with similar capabilities. Upon arrival at most urban Iowa hospitals, the patient is evaluated and treated by licensed physicians with specific interest and training in emergency care. Depending on the patient's specific requirements and the capabilities of the hospital staff, he or she may then be seen by other specialists followed by immediate hospitalization or surgery. Intensive care facilities and/or surgical intensive care facilities are usually readily available for those patients.

EMS Tomorrow

Quality of care has been a prime mover in the past and should continue to be so in the future. Quality control mechanisms must be continued and improved to insure proper pre-hospital assessment and treatment. These should include evaluation and critique of written run reports and recorded communications.

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EMERGENCY MEDICAL SERVICES IN URBAN IOWA

(Continued from page 63)

We must also require and continue to provide yearly continuing medical education for advanced EMTs.

Further geographic expansion of the EMT-P services will be needed to provide paramedic first responders to all urban Iowa residents in need of pre-hospital emergency medical care. In addition, all full-time urban hospital emergency physicians should be encouraged to pursue board certification through continuing medical education and successful completion of the certification examination. Hospital administrations interested in caring for severely traumatized patients must provide the necessary facilities and obtain a commitment from the medical staff and all ancillary per-

sonnel required to meet the needs of the trauma victim. Only then should the hospital seek designation as a trauma center.

United States Senate File 10 and House of Representatives File 3133 have been introduced to provide federal funding for further development of EMS systems and hospital reimbursement for non-insured trauma patients. A large portion of this money should be used for further improvement of the pre-hospital EMS system. These improvements should include more trained paramedics for suburban Iowa, more and better equipment and better quality assurance measures for pre-hospital and in-hospital medical care.

Urban Iowa, like urban areas in other states, enjoys a very high level of pre-hospital and in-hospital emergency medical care. This took considerable effort, time and money. We cannot expect continued progress without further effort, time and money by those concerned and interested in providing emergency medical services.

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Thomas M. Foley, M.D.

Questions and Answers



EMS Today and Tomorrow

The Governor's Task Force on Emergency Medical Services recently completed a thorough study of Iowa's EMS system. The author, a Marshalltown physician and member of the IMS Committee on Emergency Medical Services, discusses recommendations of the Task Force.

How was the Governor's Task Force on Emergency Medical Services started? Who are its members?

The Task Force was appointed by the Statewide Health Coordinating Council and began its work October 17, 1986. It is composed of representatives of various disciplines and organizations involved in EMS. I am the chairman and represent the Regional EMS Councils. Tim Peterson, M.D., represents the IMS on the Task Force. Staff support is provided by the Department of Public Health.

What was the charge given to the Task Force?

The Task Force was asked to examine Iowa's EMS system and decide what it should look like in the future. Specifically, we were to look at EMS organizational structure, standards of care and funding. We were to make

recommendations regarding possible CPR and EMT training for high school students. The Task Force felt this would be better handled by the Department of Education with help from the Department of Public Health and other organizations.

How was information gathered?

Initially, we reviewed information from various EMS groups and discussed the present status of EMS. Various position papers on Iowa's EMS were studied for ideas about a future system. Don Kerns, State EMS Director, gave the Task Force information about EMS in other states, especially how they have organized and funded statewide systems. We then began to develop our recommendations and ideas for implementing them.

What were the findings of the Task Force?

The federal EMS grants in the late 70's provided all states with "seed money" to build EMS systems but when the federal EMS grants ended in the early 80's, Iowa did not develop EMS funding mechanisms as expected. As a result, private monies and volunteerism (70% of all Iowa EMT's are volunteers) have been the mainstay of our EMS systems. Due to the aging of equipment, decreasing numbers of volunteers, and dwindling private contributions, rural Iowa EMS is facing a crisis which is leading to an inability to provide the same basic emergency pre-hospital medical care throughout all of Iowa.

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QUESTIONS AND ANSWERS

(Continued from page 65)

State government reorganization eliminated the Governor's EMS Advisory Council (GEMSAC) and the Advanced Prehospital Care Council, 2 groups that provided state level leadership. The Regional Councils and the State EMS Section have tried to take over some of their functions, but they haven't been as effective as a single group would be.

Reorganization of EMS regions has been necessary because Nebraska disbanded its regional councils, leaving 7 southwestern Iowa

"... rural Iowa EMS is facing a crisis which is leading to an inability to provide the same basic emergency pre-hospital medical care throughout all of Iowa."

counties without a regional council. We also felt it was time to streamline regional boundaries according to size and number for more efficient administration as the regions will be an important aspect of future EMS. This process has begun.

Education of the public about EMS needs to be more organized and widespread. The Task Force led the way in implementing the successful First Annual EMS Day at the State Fair. The newly formed State EMS Association has assumed responsibility for making this an annual event.

Another important Task Force finding is lack of organization and coordination between various services and EMS related groups at the county and local levels. There is a great need for more coordination at this level in order to continue to have EMS systems that are medically and cost beneficial to all Iowans.

What recommendations will the Task Force make about the future of EMS in Iowa?

The Task Force has developed an EMS plan which provides a general set of recommendations. They are:

- Establish a State EMS Coordinating Council to advise and assist the Department of Public Health in development and coordination of the EMS system.

- Develop strong EMS plans at the state, regional and county levels.

- Develop an EMS association in each county to advise the boards of supervisors on EMS including development of a county plan. Iowan) for EMS. Most of this (\$2.18 million) would go to counties. However, \$200,000 would be used at the state level, \$300,000 at the regional level and \$220,000 for special projects such as prehospital data collection, trauma registries, EMS studies, etc. The latter are necessary so those involved in EMS can establish a mechanism to evaluate our program and plan for the future. We need to continue looking at prehospital therapeutic procedures which might benefit rural Iowans if performed by first line EMS personnel.

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Considerations in Aeromedical Transport

BEVERLY J. RINGENBERG, M.D.

LUIS F. URDANETA, M.D.

Iowa City, Iowa

A review of the historical aspects, advantages and disadvantages of aeromedical transport is followed by a discussion of important medical considerations specific to helicopter and fixed-wing transportation of critically ill and injured patients.

AIR EVACUATION OF INJURED military personnel probably first took place during the 1870 Prussian siege of Paris when Frenchmen were evacuated by hot air balloon.¹ Air transport of injured victims was not used extensively until World War II.² Between 1942 and 1947, over 1,360,000 patients were air-lifted by fixed-wing aircraft with 46 deaths during flight.³ A death rate of 4.5 per 100 casualties was reported during this war.⁴ During the Ko-

rean conflict, helicopters began to play a role in the air evacuation of wounded soldiers because of the rough terrain and geographical distribution of medical facilities. During this conflict, about 20,000 patients were transported by air, with a drop in the death rate to 2.5 per 100 casualties. Throughout the Vietnam war, the helicopter was used extensively, with over 390,000 soldiers evacuated from the front line by air. The decrease in death rate to one death per 100 casualties during this period can be partially attributed to the rapid delivery of emergency medical care made possible by helicopter evacuation.⁴

The U.S. government funded several helicopter ambulance projects beginning in 1965.⁵ The first civilian aeromedical helicopter service was established in Denver, Colorado in 1972.⁶ Since then the number of services has rapidly increased (Figure 1). It is predicted by 1996 there will be 500 helicopter services dedicated to aeromedical transport throughout the U.S.⁷

Aeromedical Transport Advantages

Advantages of aeromedical transport include the ability to circumvent geographic features such as mountainous terrain, areas isolated by weather and the large distances and isolation in rural areas. Although patients may arrive at a tertiary care medical center more rapidly by air, the real advantage of an air transport program is rapid delivery of specialized medical care to the critically ill or in-

Dr. Ringenberg is medical director of Air and Mobile Critical Care Services at the University of Iowa Hospitals and Clinics. Dr. Urdaneta is associated with the Department of Surgery at the UI Hospitals and Clinics.

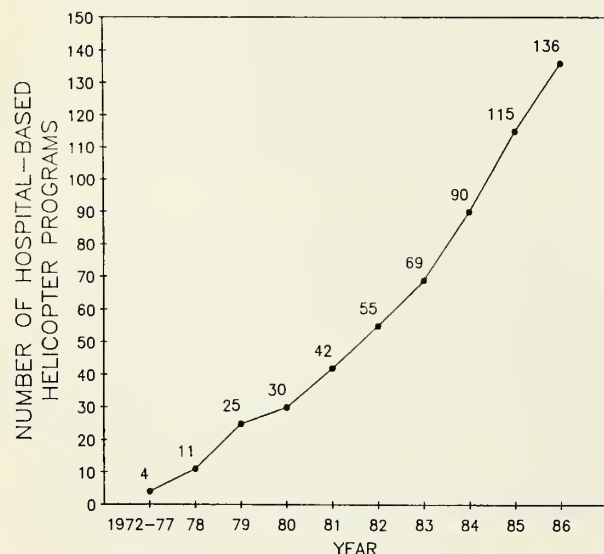
jured patient at the accident scene or the referring hospital prior to transport. Specially trained flight nurses are prepared to address life-threatening emergencies, stabilize the patient prior to transport and provide critical care monitoring throughout the trip to the tertiary care medical center (Table 1). In small communities where there may only be one ambulance available, air transportation allows the ambulance to maintain continuous service.

Aeromedical Transport Disadvantages

Potential disadvantages of air transport include the effects of altitude, motion sickness, noise, vibration, temperature and anxiety on the patient. In addition, risks related to aircraft accidents and the overall expense of the service must be considered. Bad weather can be a limiting factor. The decision to fly should be based on the safety of the mission and not the condition of the patient who may benefit from the transport. Of major importance is maintaining medical skills of the helicopter flight crew. Their efficiency may be difficult to maintain if the volume of patients transported is low.

Technical Considerations

Normal flying altitude for helicopter transport is under 2,000 feet (600 meters). Flying altitude for fixed-wing aircraft utilized



* Personal Communication Howard Collett, Editor & Publisher, *Hospital Aviation*

Figure 1. Growth in hospital-based helicopter programs.

TABLE 1

LIFE-SAVING PROCEDURES PERFORMED BY FLIGHT NURSE

Nasotracheal and orotracheal intubation
Transtracheal catheter ventilation and cricothyroidotomy
Central and peripheral intravenous lines
Venous cutdowns
Needle decompression of tension pneumothorax
Chest tube insertion
Pericardiocentesis
Application of external cardiac pacemaker

for aeromedical transport in eastern Iowa ranges from 4,000 to 10,000 feet (1,200 to 3,000 meters). When considering the effects of altitude on the patient's condition, the elevation above sea level must be taken into account since the aircraft flying altitude will be greater when traversing high terrain. Iowa's elevations range between 480 and 1,670 feet (144 to 501 meters) above sea level.

Medical Considerations

An important consideration is the effect of decreased barometric pressure present at flying altitudes which results in decreased PaO₂. At the conventional flying altitude for a helicopter in Iowa, decreased barometric pressure is not a major concern because it can be overcome by the use of supplemental oxygen. On fixed-wing missions, however, supplemental oxygen will also be required. In certain medical and surgical conditions a pressurized cabin is mandatory (Table 2).⁸⁻¹⁰

Decreased barometric pressure may result in an expansion of gas according to Boyle's law. This gas expansion will generally not be a problem when flying below 5,000 feet (1,500 meters), but must be taken into consideration in patients who have even small amounts of gas trapped in enclosed body spaces (bowel obstruction, pneumothorax, air in the cranium or orbit following penetrating injury or surgery and scuba divers), when altitude exceeds 5,000 feet (1,500 meters) (Table 2). Gas expansion could lead to increased pain and progressive cardiopulmonary or neurologic compromise.

Motion sickness can be a problem for patients and crew members. Nausea, sweating, pallor and vomiting may be uncomfortable and aggravate certain clinical conditions. In pa-

TABLE 2
SPECIFIC PATIENT CONSIDERATIONS FOR FIXED-WING TRANSPORT

-
- I. *Conditions requiring pressurized cabin* — supplemental oxygen should be used.
 1. *Cardiorespiratory conditions*
 - a. Congestive heart failure
 - b. Myocardial infarction in the previous 8 weeks
 - c. Concurrent cyanosis, cor pulmonale, and respiratory acidosis
 2. Neonates with any degree of cardiorespiratory compromise should be transported by pressurized aircraft.
 - II. *Conditions requiring altitude restrictions.* If anticipated flying altitude cannot be limited as described below, pressurized cabin will be necessary. Supplemental oxygen should be used.
 1. *Maximum altitude = 4,000 feet (1,200 meters)*
 - a. Cardiac disease with cyanosis or decompensation
 - b. Any two: cyanosis, cor pulmonale, respiratory acidosis
 2. *Maximum altitude = 5,000 feet (1,500 meters)*
 - a. Gas present in a closed space
 - 1) Intestinal obstruction
 - 2) Abdominal perforation
 - 3) Recent abdominal surgery
 - 4) Emphysematous blebs or bullae, untreated pneumothorax
 - 5) Penetrating head injury or pneumoencephalogram less than 72 hours before flight time
 - b. Untreated penetrating eye injuries
 3. *Maximum altitude = 6,000 feet (1,800 meters)*
 - a. Recent myocardial infarction
 - b. Angina pectoris
 - c. Sickle cell disease
 - d. Alveolar block with cyanosis
 - e. Cyanosis, cor pulmonale or respiratory acidosis
 4. *Maximum altitude = 8,000 feet (2,400 meters)*
 - a. Respiratory disease with vital capacity under 900 ml
 - b. Cardiac valve defect
 - c. Space-occupying lung lesion (e.g., abscess, cyst, tumor)
 - d. Anemia with a RBC below 3,000,000/mm, hemoglobin below 8.5 mg% or hematocrit under 25%
 - e. Thoracic or abdominal surgery within 10 days preceding flight
 5. *Maximum altitude = 10,000 feet (3,000 meters)*
 - a. Suspected or symptomatic cardiorespiratory disease
-

tients with increased intracranial pressure or with a jaw fixation device, vomiting may result in significant morbidity.

The noise within the aircraft interferes with monitoring of the patient (auscultation and blood pressure measurement) and compounds the difficulty of communicating with the patient. Noise may aggravate motion sickness, produce headache and result in increased general discomfort. Motion produced by air turbulence must be considered. Both patient and attendant should be restrained at all times. Weights should be removed from any traction device. In fixed-wing aircraft transports, the effect of gravity at takeoff and landing can usually be overcome by positioning the patient in the head forward position with elevation of the head to at least 30 degrees. Air evacuation in an aircraft without temperature control may be uncomfortable and

elevated environmental temperatures may further compromise a patient with borderline cardiovascular reserve.

The normal human reactions of anxiety and fear should always be considered, particularly when transporting patients with acute cardiopulmonary conditions or following a recent myocardial infarction. Sedation prior to the flight and continuous reassurance by an experienced flight crew member can reduce these fears.

Impact of Civilian Aeromedical Transport

The emergency helicopter service (Air-Care) at the University of Iowa Hospitals and Clinics was established in 1979 to extend tertiary level emergency services to community physicians and outlying hospitals.¹¹ With ex-

(Please turn to page 76)

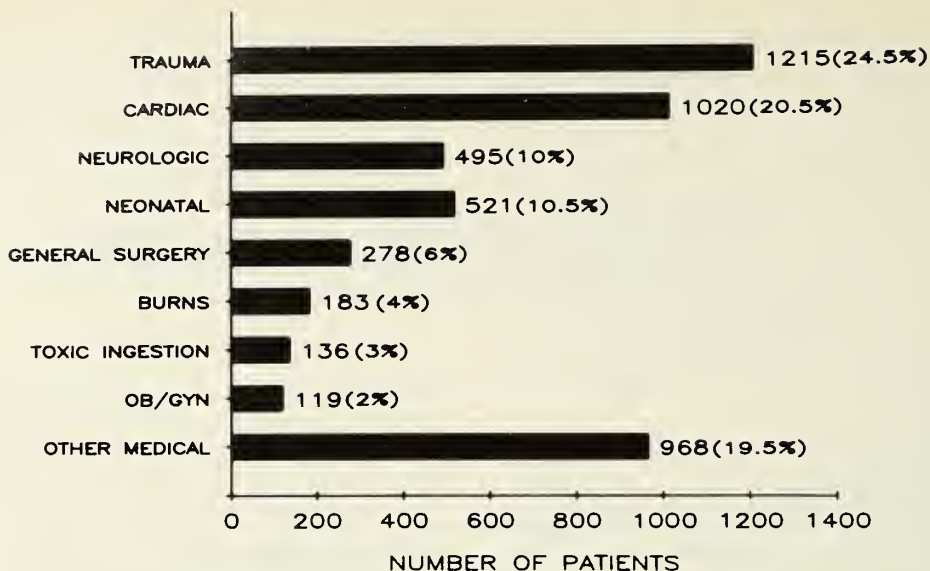


Figure 2. Distribution of Air Care Helicopter Transports April 1, 1979-December 31, 1986.

pansion of the Air-Care program in July, 1986 to 2 helicopters, the service provides air transportation to patients within a 180-mile (290-km) radius. For distances over 180 miles (290 km) or where fixed-wing transport is determined to be more appropriate, the Air-Care flight team utilizes a medically configured twin engine aircraft.

Since the onset of the program over 4,500 patients have been transported by the Air-Care helicopter service (Figure 2). As the number of aeromedical transport services increases throughout Iowa and the nation, there is a need to continue assessing the benefits on patient outcome in urban and rural settings.

The helicopter's role in transporting multiple trauma patients has been addressed by several authors. Urdaneta *et al* reviewed all trauma transports since the onset of the Air-Care program at The University of Iowa.¹² Utilizing strict criteria, the service was classified as essential, helpful or not a factor in the preservation of life and/or limb. The authors concluded the service was essential in 14.0%, helpful in 12.9% and not a factor in 56.6% of patients. In spite of rapid evaluation and maximal medical intervention, 16.5% of the patients transported died. Of these nonsurviving patients only 15.9% were deemed salvageable. Thus, 26.9% of trauma patients transported benefited from air transport. In the 16.5% who

died, rapid aeromedical transport to a tertiary care center was clearly appropriate.

Baxt *et al* compared 150 blunt trauma patients transported by air from accident scenes with 150 blunt trauma patients transported by land.¹³ They observed a significant reduction in the predicted mortality of the air transported patients. In a subsequent report Baxt reviewed 1,273 blunt trauma patients transported by 7 different hospital-based helicopter services.¹⁴ A 21% reduction in predicted patient mortality was observed when all air transports were analyzed.

These 3 studies appear to demonstrate a definite benefit of aeromedical transport in trauma patients.

Few studies have been published regarding air transport of patients with cardiac or other medical conditions. Gore reported on 50 critically ill cardiac patients transported to tertiary care centers by air and ground.¹⁵ The author concluded air transportation was rapid, safe and efficient and resulted in a favorable outcome in a significant number of patients. However, in this series only 9 of the patients were transported by air.

Forty patients with a variety of cardiac and other conditions transported by Air-Care to the University of Iowa Hospitals and Clinics with continuous ECG monitoring during transport were recently reviewed (Table 3).

TABLE 3
CATEGORIES OF PATIENTS TRANSPORTED BY AIR-CARE
WITH CONTINUOUS ECG MONITORING

Acute myocardial infarction treated with streptokinase	10
Recent myocardial infarction without streptokinase	4
Unstable angina	8
Other cardiac conditions	4
Other medical conditions (adult nontrauma)	14

Cardiac arrhythmias occurred but were rarely symptomatic and resulted in no morbidity or mortality during transport.¹⁶ More work needs to be done to clarify the potential role of the helicopter in transport of patients with cardiac and other medical conditions.

Special factors must be considered prior to air transportation of obstetric patients. Interhospital transportation during labor should be avoided. However, Merenstein *et al* have demonstrated it is preferable to transport by air a high risk mother rather than a high risk neonate following birth.¹⁷ Commercial air travel has been shown to be safe throughout pregnancy with no increased tendency toward miscarriage or detrimental effect on fetal oxygen supply.¹⁸ Even normal newborns experience an increased alveolar-arterial gradient resulting in decreased oxygen delivery to the tissues. In neonates with cardiopulmonary compromise, altitude may cause further decompensation.⁹ Endotracheal intubation and assisted ventilation may be necessary prior to transport. A pressurized cabin is required for fixed-wing transports.

Several other groups of patients deserve special consideration prior and during air transport. Patients with orthopaedic injuries requiring traction must have traction weights removed prior to the flight. Extremity air splints must be monitored to assure no vascular compromise develops. Patients with a history of seizures should be watched closely because apprehension, hyperventilation, hypoxia and flicker vertigo may induce seizure activity. Supplemental oxygen and preflight sedation may prevent this complication. When transporting neurosurgical patients by helicopter, it should be remembered in individuals with open head injuries or after recent craniotomy, the minimum safe flying altitude should be used or a pressurized cabin in fixed-wing flights

is necessary (Table 2). Patients with penetrating eye injuries or following eye surgery may need a pressurized cabin if the flying altitude exceeds 5,000 feet (1,500 meters). Although patients and attendants with upper respiratory tract infections or sinusitis may experience increased pain, barotrauma is unlikely at flying altitudes used by the aeromedical helicopter and fixed-wing aircraft. Wire cutters should be available when jaw wires have been used for treatment of maxillofacial injuries. Patients who have been scuba diving within the past 24 hours should not be airlifted. If it is absolutely necessary to evacuate this type of patient by air, the minimum safe flying altitude should be utilized.

The Air-Care helicopter service at the University of Iowa Hospitals and Clinics functions 24 hours a day and utilizes 2 helicopters. Transport requests outside of a 180-mile (290-km) radius from Iowa City are met by the utilization of a fixed-wing aircraft.

References

References noted in this article are available from the authors or the editors of IOWA MEDICINE.



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The Editor Comments



Emergency Medical Service

WAR IS HELL, yet experiences from medical care of the war-impaired has had a marked impact upon our concept of emergency medical care. Experience in evaluation (triage) of the injured, and transportation to medical facilities have brought advances in care not known 30-40 years ago. Care of the critically ill or injured has become a specialty in our profession. But, much needs to be learned and developed. Trauma kills more young and productive persons than any disease. Untold numbers are disabled at a cost of billions of dollars. Time is of the essence in care of the severely injured and the critically ill. There is no prevention other than education and legislative action to upgrade the entire provision of such medical care.

I worked at a hospital of about 150 beds during my premedical years. (Forty hours a week provided my board and room plus \$15 a month.) That hospital had an "emergency room" which was little more than a first aid facility. Patients were brought to the hospital by private automobile, sometimes in a hearse converted to an ambulance, and rarely by a bona fide ambulance. The switchboard operator called the operating room supervisor who directed a nurse (sometimes a student nurse) to unlock the emergency room and evaluate the patient. An intern was summoned and the intern contacted an attending physician when necessary.

Today we have trauma centers with advanced equipment which enables skilled

emergency-medicine personnel to give the patient every possible advantage. The mode of transportation of the trauma victim or the critically ill patient is expeditious. Aeromedical transportation by helicopter had its greatest test during the Vietnam conflict after its inauguration during the Korean War. Various data have demonstrated a definite decrease in the mortality of trauma patients transported by helicopter.

Maryland and Illinois were pioneers in development of state-wide transportation of trauma victims by helicopter. In recent years Iowa has made great strides in modes of patient transportation. Great strides have been made in rural Iowa to provide emergency medical care, but there is room for improvement. Provisions have to be made to accommodate any emergency situation whether it is an individual with a fractured extremity, a victim of a severe myocardial infarction or victims of a train or air mishap. This last example was brought home with the recent Amtrak mishap near Russell, Iowa and the fine medical service provided at the hospital in Chariton.

Communications and transportation facilities have improved. Trauma centers are well-equipped and manned by skilled personnel. Skilled ambulance personnel must be able to provide supportive care en route to the center.

This issue of IOWA MEDICINE is dedicated to Emergency Medical Service in Iowa. Our Medical Society has been active in promoting the best possible emergency medical service. We have come a long way, but the need is great for improvement and enlargement of service facilities. The task is the responsibility of the entire medical profession. — M.E.A.

Richard M. Caplan, M.D.

CME Notebook



An Argument For Reading

I SUSPECT MOST OF US probably have a list of books that we have always wanted to read, or feel that for some probably vague reasons we “should” read. Or, if we’ve not a formulated list either written or capable of being put to paper, at least a potential mental list exists such that we can react when seeing or hearing a title: “Ohh, that’s one of those books I’ve always wanted to read.”

So it was with me and the book *Erewhon* by Samuel Butler. I can’t recall when I first learned of it, or just why I felt intrigued to read it. Enough to say that the opportunity arose — a confluence of time, text, mood and discipline — and I took it. Now that I’ve read it, I’m glad. The reason for feeling glad partly relates to those wonderful lines from Robert Burns’s poem “To A Louse” in which the poet, and through him, all mankind yearns:

*O wad some Pow’r the giftie gie us
To see oursels as ithers see us!*

Burns suggests that such a power can never be ours — partly right, of course. But his very poetry puts the lie to any such absoluteness, because his lines themselves reveal to us a part of the human condition, and thus let us glimpse our limited selves as we really are. Most fine poetry and literature serve that same purpose. But *Erewhon*, published in 1872, is a part of a literary stream devoted with

full intent to comment upon ourselves as individuals, society, nations or a civilization.

Erewhon isn’t easy reading, partly because of its Victorian style, but also because its ideas and arguments challenge our fullest power of attention and engagement. Yet it’s worthwhile and fun for the mental exercise. (Thinking doesn’t yield a product, as far as I know, like the sweat generated in a tennis game, although some kind of chemical juice must be made or changed to correspond to the electrical events in all those neurons.) Many passages are so provocative or artfully phrased as to cry out for quoting, but I will mention only two details that are clearly medical in the fictional country of *Erewhon*. One of its astounding differences is the attitude toward illness, which *Erewhonians* consider highly immoral and criminal, leading them to punish the sick with scorn and hard labor in settings analogous to our prisons. Toward those who commit what we call moral or criminal offenses, on the other hand, they lavish pity and special comforting attention at home or in institutions for rehabilitation. If such a person has great means, he lets his friends know he is suffering from a severe fit of immorality, which brings them to visit him with great solicitude, the misbehavior being attributed to pre-natal or post-natal influences beyond the control of the miscreant. These offenders are attended professionally by a class trained in “soul-craft” called “straighteners” who “bend back the crooked.” They function for the morally corrupt as physicians among us minister to the sick.

In another amazing behavior, *Erewhon* society banishes all machines and technology

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out of fear that they would dominate and replace humans as humans dominate animals and plants. That worry grew from Butler's preoccupation with the rise of industrialism in 19th century Britain. Not long ago, Marshall McLuhan pessimistically remarked that "Man's response to machines is to become a machine." Also in this century, many persons voice corresponding worries about computers and their ability to transform humankind into something less, rather than more human. A recent JAMA article provided this reassurance about "computer control" of medical practice: "... commonsense insights, used routinely in patient care, are totally foreign to decision-support systems. [Such insights] will always be important to the humane practice of medicine, and practitioners will always have access to information that is meaningless to the machine." (JAMA, 258:66)

Works like *Erewhon* employ satire, or often describe some imaginary, presumably faraway place and citizenry, through whose attitudes and behavior we recognize ourselves. An early

example is Sir Thomas More's fictional civilization, *Utopia* (1515), whose name (Greek for Nowhere) has been applied to this genre of literature. Other outstanding examples have included Swift's *Gulliver's Travels*, Lewis Carroll's *Alice's Adventures in Wonderland*, and Edward Bellamy's optimistic *Looking Backward*. The dark side to such literature comes to us in the bleak views of Aldous Huxley's *Brave New World* and George Orwell's *1984*. Even the charming, anthropomorphic creatures who inhabit many of the Dr. Seuss stories insightfully characterize our personal and collective strengths and foibles (and they certainly are the fastest, easiest reading of all this list).

Forced by the literary devices of inversion, satire, and surprise, we readers of *Erewhon* must reflect on ourselves, our behavior and reasons. What we learn in that process can both amaze us and offer a slight hope of healing for errors we scarcely knew we had. Literature thus helps us know ourselves better and is a power "the giftie" has already given us, if we will just use it.

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Practice Management

Market Dynamics and the Pricing Process

PHYSICIAN SERVICES have a value in the marketplace, but how is this value defined? How are fees set? What is the influence of the marketplace? How should physicians approach the pricing process?

This article is geared toward physicians in solo practice or small single-specialty groups. Most manage their own practices without a business education.

Practice income is directly related to fees collected for services. The AMA's *Current Procedural Terminology*, Fourth Edition, (CPT-4) should help physicians codify their services. The *International Classification of Diseases*, Ninth Revision, Clinical Modification, is helpful in obtaining reimbursement from third parties. Another work, *Relative Values for Physicians*, places the relative value of various professional services in perspective.

The value of a professional service stems from the customer's perception of quality, accessibility and price. Price is the amount the consumer is willing to pay for the perceived value. It is important to understand the marketplace so the highest possible price can be applied to generate the most revenue.

You should have an objective when setting prices. Increasing patient load or retaining patients may necessitate a new and different price. An example would be participating in a PRO where non-participation would mean not having those patients. Maintaining profitability in light of increasing costs may mean an upward adjustment in fees.

Traditionally, physician fees were determined by inflationary pressures on operating

costs. That approach was valid when market sensitivity was latent and competition for patients was less intense. Obviously, sufficient revenues must be achieved to stay in business, but the cost of operating a practice no longer has such an influence on price.

Your patients are not concerned about your costs. Your goal should be to put costs into the proper perspective. Try to anticipate cost increases for the coming year and what you might do to compensate, but recognize the marketplace is the determining factor.

You must know your competition. How similar are their products and prices? Competition includes other physicians, hospital

"The goal of a pricing policy is maximizing profit while retaining patients and increasing the patient base."

emergency rooms, freestanding ambulatory care centers, competing HMOs and PPOs, the university medical center and large multi-specialty groups and their satellite operations.

Consider the economy of the market area. How would you classify the level of affluence? Is the area predominantly rural or white collar? Are there segments of the population you wish to have as patients? Are these potential patients enrolled in an alternate delivery system? Assess this population's market sensitivity and the maximum amount they will pay before seeking a new provider.

Your marketplace requires you to have a segmented fee schedule. This schedule relates, of course, to the purchasers of your professional services. Services for Medicare patients are provided under a pricing structure set by the government. The fee you receive from an HMO is the capitation amount paid

This article was authored by Arthur H. Perkins, health care consultant to the firm of McGladrey, Hendrickson and Pullen, Des Moines.

per member per month if you are a primary care physician or an amount per procedure. If you participate in a PPO, you may have discounted your usual price for fee-for-service patients. You may have another pricing policy in order to provide care to defined groups of patients according to contracts you bid or negotiate. These varying prices are a response to the marketplace made up of consumers who are more sophisticated and cost conscious.

Certain data will help in the pricing process. Market area information may be obtained through your city's planning department, area chamber of commerce or the regional planning commission. Iowa's department of commerce may also have useful data.

Fees charged by local physicians, hospitals and other providers can be obtained by direct inquiry, accountants or management consultants. Although limited in usefulness, information on prevailing charges can be obtained from Blue Cross/Blue Shield and the Medicare carrier. Also, *Medical Economics* pub-

lishes regional data on practice costs and representative fees.

Annual review of the fee structure is good policy; but pricing of your services should be a continuous process. Objectives change and contracts come up for bid or renegotiation at varying times. Prices may need adjusting.

Increasing the price of high volume procedures offers more revenue than increasing the price of low volume procedures. The best example is the office visit. Discretion is advised, however, because prices for office visits are highly visible and easily compared.

The goal of a pricing policy is maximizing profit while retaining patients and increasing the patient base. When you develop a new price schedule, we don't recommend you "market" it to your patients. Of course, you should let your patients know inquiries about any office policy are welcome and will be answered. The pricing process you go through should allow you to give thoughtful and caring responses to these inquiries.

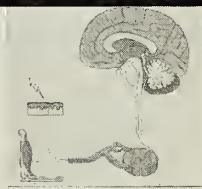
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SPECIAL FEATURE

Willingway: A Fellowship in Alcoholism and Drug Addiction

U. of I. College of Medicine

MUSCULAR DYSTROPHY DISCOVERIES at the College of Medicine are being hailed as landmark. **Kevin P. Campbell, Physiology and Biophysics**, identified a tunnel-like protein pore called a calcium release channel that controls muscle contraction. This protein is localized in the sarcoplasmic reticulum that surrounds myofibrils. Campbell also collaborated with researchers in Boston to identify the critical muscle protein dystrophin, whose absence causes Duchenne muscular dystrophy. The next step for UI researchers will be purification of dystrophin to determine its function in normal muscle. Eventually, this could help scientists design treatments aimed at replacing dystrophin or compensating for its absence, Campbell notes.

A TOP MICROBIOLOGY RESEARCHER, SCHOLAR AND TEACHER has been appointed to the UI's first endowed professorship filled from state lottery funds totaling \$500,000 and matched by university funds. **David T. Gibson** will be named professor of microbiology and biocatalysis. He currently directs the Center for Applied Microbiology at the University of Texas at Austin. As the endowed professor in biocatalysis, he will bring an established program of research and teaching to the UI, have a leadership role in the UI Biocatalysis Research group and encourage collaborations between the group and private industry. Gibson will begin his new position in September.

AT-A-GLANCE . . . Sohan Singh Hayreh, Ophthalmology, has received the Doctor of Science degree of the University of London. The university's highest award was presented to Hayreh at a formal ceremony in December in London by the queen's daughter, Princess Anne, who is chancellor of the university. . . . **Department Head George Winokur, Psychiatry**, has been awarded the Distinguished Achievement Award of the American Academy of Clinical Psychiatrists (AAPC) for excellence in research which has application to

clinical practice. The AAPC has made this award only 2 other times in its 13-year history. . . . **Department Head Francois M. Abboud, Internal Medicine**, received a distinguished achievement award from the American Heart Association (AHA). The award is given to AHA members who have made significant contributions to scientific knowledge in cardiovascular medicine.

CERTAIN DISORDERS OF THE CIRCULATORY SYSTEM thwart the body's ability to control blood pressure, according to UI study findings. In hypertension and atherosclerosis, for example, the cells lining the blood vessel wall are damaged and may result in the body's inability to control circulation and blood pressure, says **Cardiovascular Center Director Francois M. Abboud, Internal Medicine**.

JENNIFER ROBINSON NIEBYL will become head of Obstetrics and Gynecology in both the UI College of Medicine and in University Hospitals on May 1. Niebyl comes to Iowa from Johns Hopkins University School of Medicine in Baltimore, where she serves as associate professor in gynecology/obstetrics and pediatrics. Among her research interests are breastfeeding and human lactation and factors associated with premature births. Niebyl will succeed **Frank J. Zlatnik, Obstetrics and Gynecology**, who currently serves as acting head of the department.

A REGIONAL REGISTRY OF INFORMATION about dementia and Alzheimer's disease in east central Iowa is being established by the UI and state researchers with a grant from the National Institute of Aging. "A registry of this type will be an invaluable resource for researchers not only to track incidence of the disorders, but to design methods that will improve diagnosis and evaluation," says **Department Head Robert B. Wallace, Preventive Medicine and Environmental Health**.

Drug Therapy Review

JOHN E. KASIK, M.D., Editor

Sunscreens

AT FIRST GLANCE, devoting an issue of *The Drug Letter* to sunscreens in the middle of an Iowa winter would appear to be an irrational act by both the editor and the author, but protecting the skin from the damaging effects of ultraviolet light (UVR) should be a year-round activity. Those lucky enough to escape our cold winters are likely to head to the sunny south; others will head to the mountains to ski. Downhill skiers will be particularly susceptible to sun damage as there is less atmospheric filtration of UVR at higher altitudes, and they will be subject to increased UVR exposure from both direct and reflected (from the snow) UVR.

The UVR spectrum is divided into UVA, UVB, and UVC, as summarized in Table I. There is no UVC radiation in the sunlight that reaches the earth's surface since the UVC is filtered out by the atmosphere. UVC is germicidal; it is emitted by germicidal lamps as well as by mercury arc lamps. Solar radiation reaching earth contains about 10 times as much UVA as UVB, but since it is not as efficient in producing erythema, most sunscreens have been directed against UVB rather than UVA and the sun protection factor (SPF) has been measured primarily against UVB.

The energy required for producing a slight erythema (MED) is roughly equal for UVB and UVC, but much greater for UVA (Table I). It is because of the greatly enhanced erythema effectiveness of UVB that this portion of the UVR spectrum is more important than UVA

in burning from sunlight. Many hours of exposure to the UVA in sunlight would be necessary to develop an erythematous response; this would be impossible unless the sun's UVB radiation was filtered out to prevent an acute burn from the UVB. Nonetheless, there is an increasing body of evidence that UVA can produce chronic skin damage; this is of particular importance as our population frequents tanning parlors, most of which use high intensity UVA light sources.

The most obvious damaging effect of excessive sun exposure is an acute sunburn. Of greater importance are the chronic effects of photoaging, the production of precancerous (actinic keratoses) and malignant (basal cell carcinomas, squamous cell carcinomas) epithelial lesions. There is also increasing evidence that the incidence of malignant melanomas may also be increased from chronic sun exposure. Immune responses are also altered through the damaging effect of UVR on the Langerhans cells. Finally, there are many diseases such as lupus erythematosus which are aggravated by ultraviolet light.

Natural Filters

Many factors play a role in how much UVR the skin is exposed to and how much damage this UVR produces. The atmosphere acts as a UVR filter. Therefore, more UVR reaches the skin when the sun is high in a more vertical axis with the earth's surface. There is truth in the classic Noel Coward quotation "Mad dogs and Englishmen go out in the mid-day sun." It is best to avoid excessive sun exposure in mid-day since there is less atmospheric filtration than if the sun is filtered through more of the atmosphere due to its more vertical axis with the earth's surface early and late in the

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

(Please turn to page 88)

TABLE I
CHARACTERISTICS OF THE UVR SPECTRUM

Type	Spectral band	Erythema potential	Pigmentary potential
UVA	320-400 nm	low (MED 20-100 joules/cm ²)	low
UVB	290-320 nm	very high (MED 20-70 m joules/cm ²)	high
UVC	200-290 nm	very high (MED 20-100 m joules/cm ²)	moderately high

TABLE II
SKIN TYPING FOR SUNSCREEN USE

Skin type & color	Response to UVR	Sensitivity to UVR
Type I (white)	always burns easily; never tans	++++
Type II (white)	always burns easily; tans minimally	+++
Type III (white)	burns moderately; light brown tan	++
Type IV (light brown)	burns minimally; moderate brown tan	+
Type V (brown)	rarely burns; dark brown tan	+ to ±
Type VI (dark brown to black)	never burns; deeply black tan	not sensitive

day. The atmosphere's ozone is a very effective filter; this is one of the major reasons for the great concern about the recently discovered holes in the ozone layer in the Antarctic region. Further depletion of the ozone layer and spread of these holes will increase the incidence of skin cancer.

It goes without saying that clothing provides protection, and the bulk of the hair of the scalp can be considered "clothing" which also is an effective filtering substance. For instance, actinic damage of the ears is more common in men than in women since their ears are often not covered by hair. Actinic damage to the scalp is much more common in bald men. Of the intrinsic substances in the skin, the melanin content and its distribution in the skin is the single most important natural defense against UVR. Other natural intrinsic defenses include the thickening of the stratum corneum which results from sun exposure, the preferential accumulation of carotinoids in the skin, the formation of urocanic acid in the skin and certain enzyme systems such as superoxide dismutase in the skin.

Several factors enter into the type of sunscreen that should be used. First and foremost is the propensity of the individual to develop a reaction to the sun. A classification system for skin typing has been developed which extends from skin type I to VI (Table II). Those individuals classified as type I and II are very

sensitive to UVR and need very effective sunscreens. Individuals with type III or IV skin burn moderately or minimally and develop more tanning which is protective. Type V and VI skin are found in darkly pigmented races; these individuals rarely, if ever, burn. The skin type and the expected exposure obviously influence the choice of sunscreen.

Types of Sunscreens

Sunscreens are either topical agents or orally administered drugs. The orally administered drugs include psoralens, chloroquine and β -carotene; they are useful in certain specific disease states, but have not been proven to be useful for general protection of the skin. Perhaps in the future a non-toxic orally administered drug may become available.

The topical sunscreens are divided into chemical and physical sunscreens. The chemical sunscreens contain UVR absorbing chemical filters such as para-aminobenzoic acid (PABA), PABA esters, benzophenones, cinnamates, salicylates and anthranilates. They are available in creams, lotions and gels, and are cosmetically acceptable since they are colorless and act as UVR absorbers. In contrast, the physical sunscreens are cosmetically less acceptable since they contain barrier substances like titanium dioxide, zinc oxide, kaolin, talc and iron oxide. They aid as reflectors of UVR and are, therefore, opaque. Nonethe-

less, they are very effective and have the added advantage that the consumer can see if there is an adequate film of material on their skin.

In evaluating the effectiveness of a sunscreen, the sun protection factor (SPF) is used. This is a ratio of the MED of the sunscreen-protected skin to the MED of the unprotected skin. The SPF rating is listed on the labels of all sunscreen products. Using the SPF, the best protection is obtained with sunscreens containing an SPF of 15 or greater. Sunscreens with SPF's of 6 or lower provide minimal protection. In recent years, agents with SPF's greater than 20 have been developed; whether these are better than those with an SPF of 15 remains to be evaluated since they may provide more protection than is needed for the average amount of sunlight one is likely to be exposed to. On the other hand, they may be of particular help for those who are extremely sun-sensitive.

Evaluating SPF

Many variables enter into the evaluation of the SPF. These include the skin type of the test subjects, the skin site used for testing, the UVR intensity, the radiation source, the concentration of the active agent, the vehicle, the thickness of the applied film, the environment, the substantivity of the sunscreen in the presence of moisture (swimming and sweating) and the testing procedure. Thus the SPF can only be used as an approximate measure of effectiveness since standardized testing techniques have not been used in establishing the SPF for all sunscreens. Furthermore, actual usage is not the same as testing, and most sunscreens do not perform as well in the field as in the laboratory.

If cosmetic appearance is not important, a physical blocking agent will provide excellent protection. If the cosmetic appearance is important, a sunscreen containing PABA, PABA esters, combinations of PABA esters and benzophenones, or non-PABA sunscreens containing either benzophenones or cinnamates should be used. Sunscreens that only contain free PABA are probably less commonly used now since PABA, but not its esters, stain clothing. Sunscreens containing combinations of PABA esters and benzophenones provide the broadest range of activity since the protective range of the benzophenones extend into the UVA range.

Probably the most important point to emphasize to the patient is that the frequency of application must be adjusted to conditions such as the amount of exposure, the presence or absence of reflecting surfaces such as snow and water, the time of day and the activity. There is no single sunscreen that is ideal for all circumstances, and repeated applications may be necessary. Substantivity and intactness of the applied film are of utmost importance; sweating and activities such as swimming will dilute and wash off many sunscreens. It is probably the most important factor for the decreased effectiveness of sunscreens. Therefore, it is of extreme importance to reapply sunscreens frequently if one does perspire or swim.

Obviously, it is extremely unlikely that pharmaceutical manufacturers will market a sunscreen that is likely to produce an adverse reaction. Indeed, sensitization responses to commercially available sunscreens are very rare. Nonetheless, contact sensitization to sunscreens can occur and the patient should discontinue a sunscreen if a dermatitis appears. A patient who is sensitive to benzocaine, procaine, paraphenylenediamine, thiazides or other sulfonamides may show a cross sensitivity to PABA or its esters. Therefore, sunscreens containing PABA or its derivatives should not be used in patients known to be sensitive to any of the above named agents.

Summary

Sunscreens are important in the prevention of photoaging, specific sun-related cutaneous diseases and skin cancer. Topical sunscreens may either be chemical or physical. Sunscreens are rated by their protection factor (SPF); individuals with extremely sensitive skin need a sunscreen with a higher SPF than those with less sensitive skin. Many factors enter into the effectiveness of any sunscreen during actual usage. It is particularly important to remind patients that a single application of a sunscreen will not provide protection if it is washed off by sweating or swimming. — JOHN S. STRAUSS, M.D., *Professor and Head, Department of Dermatology.*

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Iowa Department of Public Health

Iowa Emergency Medical Services: Funding the Future

IOWA'S EMERGENCY MEDICAL services system is facing a crisis which may jeopardize the prompt and appropriate care of Iowans. We must maintain effective emergency medical services where they exist, upgrade services in need of improvement and develop services where there are none so the same basic standard of emergency medical care is available to every Iowan.

Prior to 1966, EMS in Iowa was provided primarily by funeral homes using hearses with poorly trained attendants and without adequate equipment. The primary purpose of emergency care was how fast you could get the "victim" to the hospital.

The 1966 Highway Safety Act and the Emergency Medical Services Act of 1973 provided the impetus behind EMS development in the United States. The EMS Act provided about \$6.5 million for EMS development in Iowa between 1975 and 1981.

In 1978, Iowa passed the "Advanced Care Law" establishing minimum standards for ambulance, rescue and first response services using advanced emergency medical technicians and paramedics. Since that time, over 140 services have applied for authorization to provide "advanced care." Iowa is among only a few states which have not established minimum standards for services that operate at the "basic care" level.

Iowa's EMS system is composed of providers ranging from the CPR trained bystander to the trained emergency medical technician to the nurse and physician in the hospital. About 71% of EMS services in Iowa are staffed by volunteers. In addition, 62% of Iowa's am-

bulance services must travel over 10 miles to the nearest hospital. This distance is extremely critical considering that irreversible brain damage begins 4 to 6 minutes after the heart stops.

When federal EMS funding was lost in 1981, Iowa experienced a sudden drop in the number of trained ambulance personnel; training levels have fallen by nearly 40%. Much of the drop can be attributed to lack of funding. In addition to donating their time whenever an emergency arises, most volunteers must pay their own training costs. These costs range from \$200-\$700 depending upon the level of training.

In 1981, the Iowa Department of Public Health estimated that equipping Iowa ambulances with nationally-recognized minimum equipment packages would cost about \$500,000. No federal EMS money has been available to purchase the needed equipment. Also, the high cost of ambulances has forced services to delay purchase of replacement vehicles.

In fiscal year 1985-1986, Iowa counties budgeted over \$800,000 in federal revenue sharing funds for ambulance services. Today, revenue sharing funds are no longer available and counties are faced with deciding whether to raise taxes to support the ambulance service or stop funding the service.

Presently, Iowa receives only \$210,000 in federal funds each year for EMS development. Previous federal EMS funds provided to Iowa were intended as seed money and Iowa was expected to assume the leadership role for EMS, including developing an on-going funding mechanism. Iowa has not implemented such a funding mechanism and ranks 48th in the U.S. in state funding for EMS. Many other states have implemented comprehensive funding programs for EMS development using moving violation surcharges, lottery proceeds, etc.

Demands upon Iowa's EMS system will increase as Iowa's elderly population contin-

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

ues to grow. To meet the growing needs, Iowa must ensure the availability of appropriately trained and equipped prehospital care providers.

The Iowa EMS Task Force was appointed in the fall of 1986 to examine Iowa's EMS system and identify the future direction for development. The task force membership includes members of the Iowa Medical Society (Tom Foley, M.D., Chairperson and Tim Peterson, M.D.) and the Iowa Osteopathic Medical Association (Mark Randleman, D.O.). The task force has proposed an annual fund of \$1 per capita (approximately \$2.9 million) which would be established for the purpose of supporting EMS development and improvement at the state, regional, county and local levels. The Iowa Department of Public Health would adopt administrative rules to administer and implement the provisions of this fund. Those

rules would address, but would not be limited to, establishment of a coordinating council, expenditure of funds, expenditure priorities, eligibility criteria, local commitment, the formula for the disbursement of funds, financial audits, recordkeeping requirements, program evaluation and any other special reporting requirements.

Funds used at the state level (\$200,000) would support necessary staff for the operation of the state EMS section. The state's EMS responsibilities are mandated in Iowa Code section 147.161 and Iowa Code chapter 147A.

Funds at the regional level (\$300,000) would be distributed among Iowa's 6 regional EMS councils and would cover staff positions and administrative costs (including training equipment and supplies). The role of the regions would be to coordinate the planning of

(Please turn to page 92)

December 1987 Morbidity Report

Disease	Dec. 1987 Total	1987 to Date	1986 to Date	Most Dec. Cases Reported From These Counties	Disease	Dec. 1987 Total	1987 to Date	1986 to Date	Most Dec. Cases Reported From These Counties
AIDS	1	40	21	NA	Influenza, lab confirmed	0	67	250	
Amebiasis	1	37	53	Polk	Influenza-like illness (URI)	875	39132	86670	Scattered
Brucellosis	0	3	1		Legionellosis	2	12	15	Emmet, Polk
Chickenpox	678	8740	7671	Scattered	Malaria	0	6	1	
Campylobacter	15	289	366	Scattered	Meningitis				
Cytomegalovirus	0	25	20		aseptic	3	76	60	Polk, Poweshiek
Eatons Agent Infection	6	66	39	Black Hawk, Linn, Polk	bacterial	13	91	90	Scattered
Encephalitis, viral	3	16	29	Crawford, Polk, Pottawattamie	meningococcal	0	5	11	
Erythema Infectiosum	6	895	294	Linn, Marion, Poweshiek, Woodbury	Mumps	31	469	87	Scattered
Gastroenteritis (GIV)	3380	19372	18956	Scattered	Pertussis	1	58	19	Dubuque
Giardiasis	47	443	388	Scattered	Rabies in animals	15	269	187	Scattered
Hepatitis, A	13	108	45	Scattered	Reye Syndrome	0	0	0	
Hepatitis, B	9	113	91	Scattered	Rheumatic Fever	0	3	6	
Hepatitis, Non A-B	2	30	28	Harrison, Scott	Rubella				
Hepatitis type unspecified	0	7	1		(German measles)	0	1	1	
Herpes Simplex	119	1229	1289	Scattered	Measles	0	0	134	
Herpes Zoster	0	2	0		Salmonellosis	16	186	281	Scattered
Histoplasmosis	4	20	22	Boone, Buchanan, Fayette, Winneshiek	Shigellosis	17	112	23	Scattered
Infectious mononucleosis	26	190	250	Blackhawk, Floyd, Linn, Mitchell, Polk	Toxic Shock Syndrome	1	6	8	Palo Alto
					Tuberculosis				
					total ill	4	44	46	Mitchell, Scott, Story
					bact. pos.	2	41	43	Scott, Story
					Typhoid Fever	0	0	1	
					Venereal diseases				
					Gonorrhea	275	2990	3866	Scattered
					Chlamydia	390	3697	2758	Scattered
					Syphilis	1	27	9	Harrison

IOWA DEPARTMENT OF PUBLIC HEALTH

(Continued from page 91)

EMS system development in their particular multicounty area and with the other EMS regions in the state.

The Department would fund special projects (\$220,000) that would enhance EMS system development. Examples of special projects would include, but would not be limited to:

- Prehospital care reports and data collection
- Trauma registries
- EMS instructor workshops
- EMS surveys
- EMS studies of new skills, medications and equipment

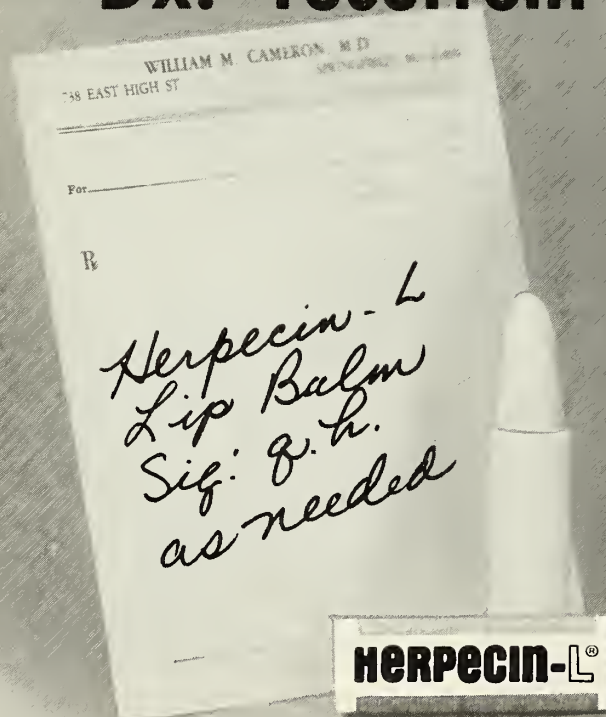
The Department could enter into a contract with a governmental, public or private

organization approved to conduct special projects. Special projects are necessary to gather essential data about Iowa's EMS system to assist with programming and planning.

Minimum eligibility criteria for the disbursement and use of funds by counties at the local level (\$2,180,000) would include an allocation formula. These funds would be used to supplement (not supplant) funds currently available for EMS. Each county would establish an EMS association to provide program evaluation and advise the county board of supervisors on EMS-related matters. In conjunction with the county EMS association, the county board of supervisors would submit a plan for EMS development to the regional EMS councils for review and approval. Participation of the medical community in the development of a county/regional/state EMS plan is essential.

The crisis facing Iowa's EMS system must be addressed by providing funding to maintain these life-sustaining services. Otherwise, Iowans — especially those in rural areas — will lose effective prehospital emergency care.

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About Iowa Physicians

Dr. William B. Paltzer has joined **Drs. Joseph M. Freund** and **Raul Ruiz** in the Eldora Clinic. Dr. Paltzer formerly practiced at the Lowden Medical Clinic in Lowden. **Dr. Kathleen Foster-Wendel** has joined the staff at McFarland Clinic, P.C. in Ames. Dr. Foster-Wendel received the M.D. degree from the University of North Carolina School of Medicine, Chapel Hill. She completed her pediatric residency at Blank Children's Hospital in Des Moines. **Dr. Kenneth B. Washburn** has joined the Park Clinic, Mason City, in physical medicine and rehabilitation. Dr. Washburn received the M.D. degree from the University of Missouri School

of Medicine, Columbia. Prior to joining the Park Clinic, Dr. Washburn practiced in Texas. **Dr. Richard Rogers**, Eldora, was honored at an open house at the Eldora Regional Medical Center. Dr. Rogers has retired after serving the Eldora community for 45 years. **Dr. Burt Bottjen** and **Dr. David Carlyle** have joined the staff at the Kossuth Family Health Center in Algona. Dr. Bottjen received the M.D. degree from the U. of I. College of Medicine and completed his family practice residency at Broadlawns Medical Center in Des Moines. Dr. Carlyle formerly practiced at the Titonka Medical Center. He received the M.D. degree from the



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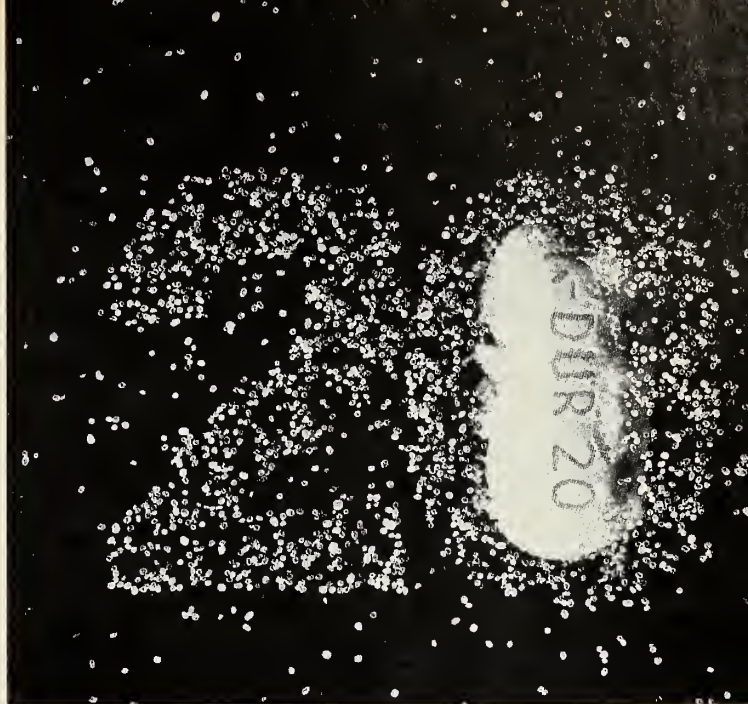
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U. of I. College of Medicine and served his family practice residency in Waterloo.

Dr. William C. Mobley, Davenport, has received the Thirlby Award for presenting the best scientific project at the American Urology Association's North Central Section annual convention. **Dr. John H. Smith**, Bettendorf, co-authored the paper. **Dr. Geoffrey Miller** was re-elected to the Anamosa School District Board of Education. Dr. Miller practices in Anamosa and Central City. **Dr. Jack Dodd**, Ames, has been named a Fellow in the American Psychiatric Association. Dr. Dodd is on staff at the McFarland Clinic, P.C. in Ames. **Iowa Lutheran Hospital**, Des Moines, earned an Award of Merit at the 1987 Health Care Forum Innovator Awards Competition for their Physician Leadership Development Plan. **Dr. N. L. Saxton**, medical director at Iowa Lutheran, received the award on behalf of the Hospital. The following physicians have been elected officers of the Iowa Academy of Family Physicians: **Dr. Robert Christensen**, Carroll, president, **Dr. Larry Boeke**, West Union, president-elect, and **Dr. James Kimball**, Osceola, vice-president.

Dr. B. S. Ajaikumar and **Dr. Rohini Reganti** have opened a cancer-treatment clinic in Burlington. Dr. Ajaikumar has practiced in Burlington for 8 years and Dr. Reganti has also practiced locally for 4 years. **Dr. Ronald A. Vidal**, Clinton, recently was elected to Fellowship in the American College of Surgeons during their annual meeting. **John W. Colloton**, Iowa City, director of University of Iowa Hospitals and Clinics and assistant to the university president for statewide health services, was installed as chairman of the Association of American Medical Colleges (AAMC) at the association's 98th annual meeting. **Dr. Jeanne Giddings** has begun practice at the Mercy-Skywalk Medical Clinic in Des Moines. Dr. Giddings received the D.O. degree from the University of Osteopathic Medicine and Health Sciences in Des Moines, and completed her residency at Iowa Lutheran Hospital. The College of Biological Sciences at the University of Osteopathic Medicine and Health Sciences in Des Moines has appointed **Dr. Dennis Mal-**

(Please turn to page 96)



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1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium-Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS, and OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS and WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS and WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 mEq/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3. Correction of acidosis, if present, with intravenous sodium bicarbonate.

4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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ABOUT IOWA PHYSICIANS

(Continued from page 95)

lory, Toledo, as chairman of the Physicians Assistant Advisory Board. **Dr. Eugene L. Johnson, LeClaire**, has been named a Fellow of the American College of Radiology.

Dr. George Klok, longtime Council Bluffs pediatrician, has retired from medical practice. Dr. Klok received the M.D. degree at the University of Nebraska College of Medicine in Omaha and began medical practice in 1940. **Dr. Robert Carl Zwicky** has begun medical practice at the Covenant-Traer Medical Clinic in Traer. Dr. Zwicky received the D.O. degree from the Kirksville College of Osteopathic Medicine in Kirksville, Missouri. Prior to joining the Clinic, Dr. Zwicky served at the medical Acute Care Clinic at Bethesda Naval Hospital in Maryland. **Dr. Thomas Lally, Dubuque**, has been named Medical Director of the Wendt Regional Cancer Center at Finley Hospital in Dubuque. Dr. Lally has been a radiation oncologist for the past 11 years at Finley. **Dr. S. K. Seth** has joined the Park Clinic in Mason City. Dr. Seth received the M.D. degree at the University of Grenoble in France. Prior to joining the Park Clinic, Dr. Seth was in family practice in Peoria, Illinois. **Dr. Earl G. Rozeboom, Winterset**, was recognized for 25 years of continued membership in the American Academy of Family Physicians at the 39th Annual Convention of the group.

Deaths

Dr. Robert H. Foss, 72, Des Moines, died November 5, 1987. Dr. Foss received the M.D. degree at the U. of I. College of Medicine and training in ophthalmology at the University of Iowa Hospitals. He began medical practice in Clinton in 1946 and later practiced ophthalmology for 20 years in Des Moines.

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In the Public Interest

A Preventable Tragedy

PART OF BEING YOUNG is believing you are physically invincible, but statistics are sad proof to the contrary. In Iowa, 70% of those who suffer head and spinal cord injuries are under 26 and almost 40% are between 15 and 24.

The year-old Iowa Head and Spinal Cord Injury Prevention Project Committee which is under the auspices of the Iowa Head Injury Association is working hard to combat this problem. Committee members believe ways can be found to prevent the tragic loss of life potential.

"Our prime function and purpose is education of Iowa junior and senior high students about head and spinal cord injuries," relates Carol Watson, a Cedar Rapids nurse who chairs the project. "Despite the fact they are the high risk group, kids just don't see themselves as vulnerable."

The committee has 15 volunteer members. James Lamorgese, M.D., a Cedar Rapids neurosurgeon, represents the IMS and Randy Winston, M.D., of Des Moines represents the Iowa Midwest Neurosurgical Society. Other committee members include R.N.s from several hospitals, a social worker and representatives of governmental and private organizations. Iowa's committee is a replication of a national project sponsored by the American Association of Neurological Surgeons and the Congress of Neurological Surgeons. The project is funded entirely through donations.

The main component of the project is a program the committee hopes to take to every junior and senior high school in Iowa. The program includes teacher orientation, a film which shows how head and spinal cord injuries occur, presentations by an EMT and someone who has sustained a head or spinal cord injury and follow-up classroom projects.

Attitude surveys and seat belt audits are done before and after the program.

"Seat belt usage in this age group is terrible," comments Watson. "About 50% of head and spinal cord injuries are related to motor vehicle accidents. In the future, we hope to expand our program to the grade schools and create good habits at an early age."

The Iowa Head and Spinal Cord Injury Prevention Project Committee is also pushing for state legislation the committee believes will help accomplish its goals. The committee is cosponsoring a study which is compiling data on the cost of head and spinal cord injuries, data the committee hopes will convince legislators of the magnitude of the problem. The results of the study will be shared with the legislators during the 1988 session. A recent sample of 38 patients in 2 Iowa hospitals showed the average cost for acute hospital care for a head injury is \$60,099. The average acute hospital care cost for a spinal cord injury is \$50,232.

"This doesn't include rehabilitation costs or lost opportunity income," Watson states. "These injured kids will live a near normal life expectancy."

The report to the Iowa Legislature also discusses the issue of insurance. Many people in the 15-24 age group don't fall under their parents' policies and don't have their own. An estimated one-third will be Medicare patients.

"Another problem is the fact that head injuries are not recognized as disabilities at the state and federal levels. This means these people don't automatically qualify for programs for disabled people. The report to the legislature contains recommendations on what can be done to address all these issues. We hope some good legislation will come out of it," Watson concludes.

February 1988

Iowa Medicine

President's Privilege



A Time For Balance

IS IT THE PLAGUE of the century, the leprosy of our time?

There has been enough written about AIDS to last a lifetime. Misinformation and fear have caused hysteria. Now is the time for keeping the problem in perspective — now is the time for balance.

Problems abound.

What about testing? Who should be tested and should it be mandatory for certain groups? Who will decide where the rights of individuals end and the rights of society begin? What about the cost of testing and counseling? Who will the counselors be? Maybe we'll need educated information givers as well as counselors.

The patient's right to confidentiality must be carefully weighed against the caregiver's right to know the risks. Confidentiality is not an absolute, inviolable right. All medical information must be guarded, all patients treated with respect. Yet those who provide care to AIDS patients must also be protected, guarded and treated with respect.

The cost to the nation for testing, research and treatment of AIDS will be great. The greatest cost will be the emotional price paid by the patients, their families and the caregivers.

In a recent edition of *AM News*, an expert with the Centers for Disease Control predicted the AIDS epidemic will get much worse before

it gets better. If this is true, society will be forced to find solutions to these and other weighty AIDS issues. All physicians have a responsibility to learn about this disease and carefully consider the attendant ethical issues. There is little doubt we will be looked to for help in dealing with them. In response to the growing need for AIDS education and guidance in forming public policy, the Society created the IMS Committee on AIDS. This committee will continue its extensive study of AIDS-related issues and its efforts to educate physicians and the public.

This issue of *IOWA MEDICINE* is devoted to various aspects of the AIDS problem. Please read it carefully.

A handwritten signature in dark ink, reading "D J Walter M.D." in a cursive style.

Dennis J. Walter, M.D.
President

AIDS in Iowa

LAVERNE A. WINTERMEYER, M.D.

Des Moines

CHARLES M. HELMS, M.D., Ph.D.

Iowa City, Iowa

Though the incidence of AIDS in Iowa is small compared to high-incidence areas of the U.S., the disease has had a substantial impact on the public and the health care community. The authors discuss the AIDS situation in Iowa and how it is being dealt with.

IOWA REPORTED ITS FIRST CASE of the Acquired Immune Deficiency Syndrome (AIDS) in 1983. Since then, cases reported to the Centers for Disease Control (CDC) from the state have essentially doubled annually. In 1987, 40 cases were reported. The total number of cases reported to the CDC from Iowa since January 1, 1983, stands at 85.

Thirty-five of the state's 99 counties have reported AIDS cases; however, only 12 counties account for 62 (73%) of the cases. Twenty-three counties have recorded a single case. Of the 85 Iowa AIDS cases, 81 (95%) have been male, 63 (74%) have been homosexual or bisexual, 9 (11%) have been intravenous drug

abusers and 8 (9%) have had hemophilia. Contrary to national statistics, minority groups which comprise less than 2% of the state's population have not been overrepresented among AIDS patients. To date, 43 persons with AIDS (51%) have died, 40 (47%) are living and 2 (2%) have been lost to follow up.

Statewide Response

Although the number of AIDS cases reported from Iowa is small relative to high incidence regions of the United States, the impact of AIDS on the public and the health care community in Iowa has been substantial. Media coverage of AIDS nationally and locally has generated considerable public concern. The governor, state agencies, the state legislature, public interest groups, health professional groups and the private sector have responded independently to the emerging problem of AIDS in Iowa by setting up AIDS fact-finding groups, task forces and AIDS counseling, referral, education and training services.

Considerable state and local resources have been expended on various aspects of

"Although the number of AIDS cases reported from Iowa is small relative to high incidence regions of the United States, the impact of AIDS on the public and the health care community in Iowa has been substantial."

Dr. Wintermeyer is Chief, Bureau of Infectious Disease Control and state epidemiologist for the Iowa Department of Public Health. Dr. Helms is an internist specializing in infectious diseases and associate dean at the University of Iowa College of Medicine. Both are advisory members of the IMS Committee on AIDS.

AIDS control. Many individuals and groups, too numerous to mention individually, have contributed immensely to efforts to educate others and manage AIDS in a rational and humane manner.

The Iowa Department of Public Health has taken these important steps:

- The department has made almost 300 formal presentations throughout the state to medical and nonmedical personnel.

- AIDS coalition groups have been organized and financially supported in 7 major cities for the purpose of educating the public.

- The Iowa AIDS Task Force was organized and formulated the Iowa School Attendance and Home Health Care Policies.

- An instructor's manual has been developed jointly with the Iowa Department of Education for use in schools.

- An Iowa resource manual has been compiled listing various AIDS services.

- Twelve alternate testing sites have been designated and supported.

- The department has participated in a number of policy forming committees such as those sponsored by the Iowa Medical Society, Hospital Association of Greater Des Moines and State of Iowa Department of Personnel. Liaison has been established with many other organizations to assist in management of problems related to AIDS.

Further Efforts

The University Hygienic Laboratory has performed a valuable service by testing over 12,000 samples for HIV antibodies by the ELISA method and confirming over 500 by Western Blot. An AIDS forum has been established to exchange information and facilitate education and research.

Blood banks have made the blood supply safe by testing all blood donated for transfusions since March 1985. The American Red Cross has been a leader in developing and providing educational programs, instructional resource materials and brochures.

The health science colleges of the University of Iowa and University of Iowa Hospitals and Clinics have contributed heavily in both education and in caring for a majority of Iowa's AIDS patients. A multidisciplinary clinic for HIV infected patients is expected to be functioning in the near future. A regional hemophilia center has developed programs to deal with problems of HIV positivity in the hemophiliac population. The University has submitted application to the Health Resources and Services Administration of the U.S. Public

Health Service to be a part of a Regional Center for AIDS Education for Health Professionals.

It is difficult to accurately predict the long term effects of AIDS on the state. The numbers of cases of AIDS in Iowa — as in the rest of

"It is clear, therefore, that there is a need for AIDS education and training with emphasis on prevention and patient care in the years ahead."

the nation — are increasing logarithmically. This trend is expected to continue for at least the short term. A cure and vaccine for the disease are not on the immediate horizon.

It is clear, therefore, that there is a need for AIDS education and training with emphasis on prevention and patient care in the years ahead. Optimally, these educational services should network and coordinate for reasons of consistency of curriculum and economy. They should address needs peculiar to a large, rural state like Iowa with a low incidence of AIDS and formulate policies based on scientifically sound information. This is the major challenge for Iowa's health professionals in the immediate future.

Special AIDS Insert

Included with this month's issue of *IOWA MEDICINE* is a special insert entitled "AIDS in Iowa: Resource Information." The insert contains factual information about the disease and a list of Iowa AIDS resources. The insert is designed to be placed in office reception areas for patient education purposes or for distribution to public audiences.

Additional copies of the insert are available by writing or calling the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265, 515/223-1401 or 1/800-422-3070.

Managing HIV Exposure In the Hospital Setting

DANIEL H. GERVICH, M.D.
Des Moines, Iowa

A task force operating under the auspices of the Hospital Association of Greater Des Moines has just completed a model protocol for dealing with AIDS in the hospital setting. The author discusses details of the proposed protocol.

FOR THE PAST 3 MONTHS a task force coordinated by the Hospital Association of Greater Des Moines (HAGDM) has been developing a protocol for preventing transmission of the human immunodeficiency virus and management of potential exposure of health care workers.

The task force is comprised of physicians representing all 10 hospitals in the greater Des Moines area and a variety of physician specialties. The task force also includes hospital infection control coordinators, legal counsel, public and employee relations staff and representatives of the Iowa Department of Public Health. The protocol reflects current scientific knowledge of the epidemiology and communicability of the virus in the health care setting.

It is compatible with current recommendations and policy statements of the Center for Disease Control (CDC), the U.S. Department of Health and Human Services, the American Hospital Association and the American Medical Association. The Occupational Safety and Health Administration of the U.S. Department of Labor has given clear notice it intends to enforce the CDC's current statement "Recommendations For The Prevention Of HIV Transmission In Health Care Settings," August 21, 1987 volume 36 no. 2 S.

Handling the Risks

The model protocol for preventing transmission of AIDS and management of HIV/AIDS in the hospital setting prepared by the HAGDM task force deals with preventing exposure to the virus in the health care setting and handling a possible accidental exposure to the virus.

Eleven well-documented cases of health care workers acquiring the human immunodeficiency virus have been reported. All these cases occurred after injections of small amounts of blood by accidental needle stick or exposure of mucous membranes or damaged skin to blood from HIV infected patients. The risk from each event is less than 0.5%.^{1-3, 6} Three cases of occupational acquisition of HIV virus (presumably by direct contact of damaged skin or mucous membrane with the blood of infected patients) have been reported. Barrier precautions described in the model protocol developed by the task force would have prevented these exposures.

Dr. Gervich is an internist who specializes in infectious diseases. He is in private practice in Des Moines.

The policy known as "universal precautions" increases the number of situations in which barrier precautions are used in routine care of all patients as opposed to the tradition of using barrier techniques or isolation based on a documented or suspected diagnosis. This policy calls for these precautions in the care of all patients, especially in emergency settings where the risk of blood exposure is increased.

Gloves are to be worn for all contact with mucous membranes, wounds and moist body substances including blood, feces, urine, sa-

"Implementation of universal blood and bodily fluid precautions for all patients eliminates the need for Isolation™ category of blood and bodily fluid precautions previously recommended by the CDC..."

liva, sputum, wound drainage and other bodily fluids excluding sweat. Similarly, gloves should be worn for situations or procedures where potential exists for contaminating hands with these substances, such as venipuncture or other vascular access procedures. Masks, protective eye wear or face shields should be worn during procedures likely to generate droplets of blood or other bodily fluids (i.e. dental procedures, endotracheal intubation, or suctioning endotracheal or tracheostomy tubes).

Impervious gowns or aprons should be worn during procedures or treatments likely to generate splashes of blood or bodily fluids. Implementation of universal blood and bodily fluid precautions for all patients eliminates the need for the Isolation™ category of blood and bodily fluid precautions previously recommended by the CDC for patients carrying the hepatitis B virus HIV, the Jacob-Cruetzfeld agent, etc. This does not eliminate the need for additional isolation precautions which might be necessary as the result of other suspected or documented communicable diseases such as tuberculosis or infectious diarrheal illnesses. It is recommended the Isolation™ category of blood and bodily fluid precautions and all of its acutriments (including the labeling of specimens) be discontinued after a transition period not to exceed 6 months.

HIV Testing

Routine serologic testing for HIV infection as an adjunct to universal precautions is not recommended for patients or health care workers. Testing of certain patients and health care workers under particular circumstances may be indicated.

The ELISA screening test for HIV antibody, while quite reliable in its sensitivity, loses specificity in low risk populations. If 100,000 low risk patients were tested, there would be about 250 positives. Of these only 10% would be true positives. While the confirmatory Western Blot is more specific, it would identify 39 of the 250 low risk individuals who are positive by ELISA as being positive. Only 28 of the 39 (72%) would be true positives. These results are in distinct contrast to those obtained when examining high risk populations.⁴

According to the task force's protocol, "Any serologic testing for HIV infection should be entirely voluntary on the part of the affected patient or health care worker and should be ordered and performed only after appropriate pretest counseling and the informed written consent of this subject have been obtained. The subject should be informed promptly of test results and a seropositive person should be provided with post test counseling by properly trained persons. Institutions . . . must assure that confidentiality safe guards are in place . . . as required by law."⁵

In addition, the protocol says any physician is free to order HIV serology on any patient. "A physician may wish to request that the patients undergoing major operative procedures in which exposure of health care workers to large amounts of the patients' blood or bodily fluids or patients undergoing treatment in the critical care setting involving uncontrolled bleeding or undergoing obstetrical or gynecological procedures voluntarily consent to serologic testing for HIV if they are in a high risk group for HIV infection."⁵

"Patients to whom health care workers have been exposed through direct contact with blood or bodily fluids may be asked to voluntarily consent to HIV antibody testing by the patient's physician if his assessment indicates that the patient may be in a high risk category. Serologic testing for HIV should be

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available to all health care workers who are concerned that they may have been infected with the Human Immunodeficiency Virus . . . If the source patient has AIDS, is positive for HIV antibodies, or refuses the test or if the source patient is unknown, sero-negative health care workers should be retested six weeks, twelve weeks and six months after exposure to determine whether transmission has occurred."⁵

Noteworthy Accomplishment

Designing a rational protocol to serve as a community standard in dealing with the AIDS virus in the hospital has been a difficult and complex task. Scientific fact, emotions, the law and logistics all must be dealt with. The model protocol submitted by the HAGDM task force is a noteworthy accomplishment. While

considerable work remains to be done in education and establishing the recommended policies, this document represents a major step which is being recognized far beyond the Des Moines area.

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Taking Sexual Histories: Now It's Essential

MARK C. JOHNSON, M.D.
Mason City, Iowa

The direct link between sexual activity and risk for AIDS has made it vital that physicians obtain a complete sexual history from patients. The author, a member of the IMS Committee on AIDS, discusses ways to approach this sensitive task.

TAKING A SEXUAL HISTORY has traditionally meant inquiring into sexual satisfaction, appropriate physiological responses and possible past exposure to sexually transmitted diseases. All of these are important, but the issue of AIDS requires obtaining other pertinent history.

In a busy clinical practice, physicians have many options when performing a history and physical examination. A "complete" history and physical is ideal but not practical in many situations. Often the sexual history has been sacrificed to time restraints. It has also been avoided because of the sensitivity of the subject. Many surveys performed in the last 2 to 3 years point out the need for physicians to be more compulsive in sexual history-taking.

This article focuses on the sexual history as it pertains to AIDS. The link between sexual behavior and HIV infection has made a complete sexual history paramount, although one can argue conventional sexually transmitted diseases are reason enough to discuss this issue. The purpose of this article is to remind physicians of the necessity of discussing subject matter that is sensitive, personal and possibly of a very intimate nature.

Lack of Training

A 1986 survey of primary care physicians in California found well under half took sexual histories from their new patients. At most, 10% were specific enough to obtain the information needed for assigning risk and counseling patients.

The vast majority of physicians have no training in obtaining a sexual history and are uncomfortable with it. When one adds the intimate nature of the questions needed to assign risk for HIV infection, the problem is compounded. Many physicians feel their patient's sex life is none of their business, or fear the questions will offend their patients. Often physicians justify avoiding these questions because they suspect their patients don't always give truthful answers. Also, the patient's answers may challenge the physician's own sexual and moral beliefs.

Prevalence of homophobic attitudes is present among physicians as in other sectors of society. Although physicians are trained to put aside value judgments and provide unbiased care, some studies have suggested these attitudes are present and physicians are reluc-

Dr. Johnson is an internist who practices in Mason City. He is an advisory member of the IMS Committee on AIDS.

tant to admit to them. This is a difficult issue and one physicians, especially those in primary care, must deal with openly and honestly before they can be open with someone from whom they are taking a sexual history.

The 'Right' Situation

In what situation should a sexual history be taken? In a real physician/patient relationship, i.e. a long-term relationship, this question probably should arise in some form. I approach my patients directly and often begin with the matter-of-fact statement, "I am going to ask some personal questions that I ask all of my patients. I believe they are important so I can take care of you appropriately."

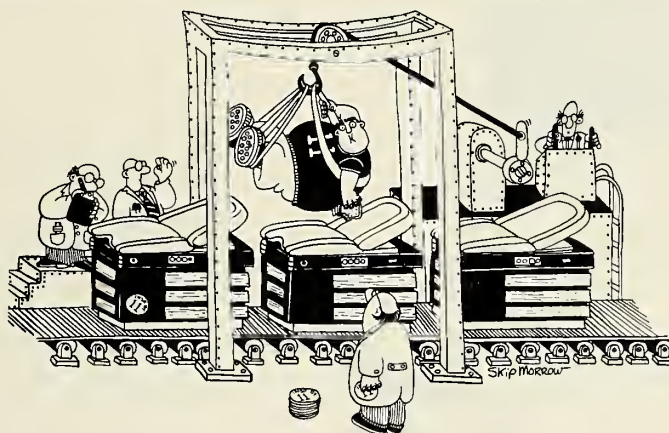
I don't ask if the patient is gay, straight or bisexual as these are labels patients give themselves. I ask, "Do you have sex with men, women, or both?" This will lead to appropriate questions as to behavior which puts one at risk to HIV infection. A follow-up question can be, "Do you take precautions against AIDS?" Ask a man if he uses a condom when he has sex.

Ask a woman if she insists sexual partners use condoms every time.

These 2 questions — who they have sex with and do they protect themselves — are all I need answered. If a positive history for high risk behavior is obtained, HIV testing in most situations is warranted.

Such questions can lead to a general discussion about AIDS. Many patients have questions about AIDS but are unwilling to ask. This is one reason the general topic of AIDS should be addressed in patients of all ages. Older patients may have questions about AIDS that arise as part of the sexual history, even though one may not address specific behaviors in those patients. Physicians have a responsibility to society in this area. We must dispense appropriate and correct information as many patients have misinformation. Some patients may be unreceptive to sexual history-taking, and physicians must respect this. However, in my experience most patients do not object to appropriate questioning if it is done with sensi-

(Please turn to page 120)



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tivity. Meaningful conversations have started with these relatively intimate questions.

Conclusion

Our traditional questions as to sexual satisfaction are no longer adequate. Specific questions as to sexual behavior are needed. As a member of the IMS Committee on AIDS, I urge Iowa physicians to discuss these issues with their patients. To not do so is to shirk your responsibility to your patients and to society. Dispensing appropriate information is the most important way to limit the spread of AIDS.

IMS AIDS Testimony

THE IMS PERSPECTIVE on AIDS-related issues was the subject of testimony given to the Iowa Legislature's AIDS Task Force on December 18, 1987. The testimony was presented by John Olds, M.D., Des Moines, chairman of the IMS Committee on AIDS.

Dr. Olds' testimony was drafted by the IMS committee in response to questions from the task force. The IMS recommendations are in line with those established by the American Medical Association.

Among key recommendations contained in the IMS statement were:

- AIDS tests should be available for all who wish to be tested and subsidized for those who cannot afford to pay.
- Voluntary testing should be regularly provided for those in high risk categories or high risk areas who give informed consent.
- Physicians should encourage voluntary testing for those whose history or clinical status warrant this measure.
- Those who are seropositive for the AIDS virus should be reported to public health officials confidentially or anonymously with significant epidemiological information.
- Physicians should provide specific counseling to patients found to be seropositive.
- The IMS supports the recent position of the AMA which states that physicians have an ethical responsibility to treat HIV infected individuals within their scope of competence.
- The IMS Committee on AIDS has identified the lack of facilities to provide long term care as a gap in services to AIDS patients.

John W. Olds, M.D.

Questions and Answers



Focus on AIDS Education

Last summer, the IMS formed a special committee to develop Society policy on AIDS and assist governmental and other organizations dealing with various AIDS issues. The author, chairman of the IMS Committee on AIDS, discusses the committee's activities and priorities.

How and why did the IMS Committee on AIDS come into existence? What is its charge?

In July of 1987, recognizing the IMS should keep apprised of AIDS developments and assume a leadership role in developing AIDS guidelines and policy statements, the Board of Trustees established the special IMS Committee on AIDS. The committee is charged with providing guidance and developing recommendations regarding such issues as testing, financial/legal rights, care, prevention, ethics and education.

What have been the initial activities of the committee?

After defining responsibilities and objectives, the committee reviewed basic scientific information and other literature regarding AIDS. We studied and discussed literature published by the CDC, the AMA and other scientific sources. We reviewed position state-

ments and other material developed by state and county medical societies, AIDS task forces and governmental bodies.

What AIDS-related issues will the committee focus on in the coming months?

We defined our responsibilities and objectives to include the following priorities: writing of a position statement on AIDS issues for consideration by appropriate IMS and governmental policy making bodies; physician education; assist hospitals as they develop AIDS policies; and public education. Key issues include appropriate testing, financial resources and support, legal rights including confidentiality, access to care, medical ethics in providing that care and optimal use of limited resources to educate physicians and the public. This education should focus on preventing transmission of the virus.

Please tell us about the committee's report to the Iowa Legislature's AIDS Task Force.

I was privileged to appear before the Legislative AIDS Task Force December 18, 1987. We gave the task force a 5-page statement stating our position on issues such as HIV testing, AIDS education, recommendations for protection of health care workers and gaps in services to AIDS patients. Several handouts were given to each member of the task force and a lively question and answer session ensued.

What role will the committee play in formulating public policy on AIDS issues in Iowa?

We have offered the services of the IMS Committee on AIDS to provide further testi-

(Please turn to page 122)

mony to the Legislative AIDS Task Force and other governmental agencies involved in developing public policy on AIDS issues. Public policy is a reflection of what the public wants, and I hope our efforts at public/physician education will play a role in determining what the public wants. The several bills recently proposed by the Legislative AIDS Task Force are generally consistent with the positions we took in our testimony in December.

How important is education in dealing with AIDS?

Because AIDS is spread primarily through intimate sexual contact and IV drug use, neither a plethora of new laws directed at human behavior nor indiscriminate testing will serve much purpose. Education aimed at prevention will. We — and that includes the scientific community and several levels of government — must devote our resources to teaching each other and the public about this modern day plague.

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BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that the simultaneous administration of CARAFATE with tetracycline, phenytoin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. The clinical significance of these animal studies is yet to be defined.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No evidence of drug-related tumorigenicity was found in chronic oral toxicity studies of 24 months' duration conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies have not been conducted.

Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients, adverse effects were reported in 121 (4.7%). Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

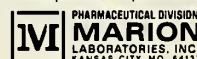
HOW SUPPLIED

CARAFATE (sucralfate) 1-gm pink tablets are supplied in bottles of 100 and in Unit Dose Identification Paks of 100. The tablets are embossed with MARION/1712. Issued 3/84

References:

1. Grossman MI, in *Scand J Gastroenterol* 58 (suppl 15):7-16, 1980.
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HIV Infection: Manifestations, Therapy and Transmission

HALA SHAMSUDDIN, M.D.

JACK T. STAPLETON, M.D.

Iowa City, Iowa

The authors discuss the spectrum of clinical manifestations of AIDS, the modes of transmission and the current status of AIDS therapy and research.

SINCE IT WAS RECOGNIZED IN 1981, Acquired Immunodeficiency Syndrome (AIDS) has become a pandemic. About 63,000 cases worldwide were reported to the World Health Organization by October 1987, 43,000 in the United States alone. An estimated 1-2 million people carry the virus in the U.S., with several million carriers in Africa.

The disease is caused by a retrovirus classified as the Human Immunodeficiency Virus type 1 (HIV-1), previously called HTLVIII or LAV. The receptor for the virus on human cells is the CD4 molecule. This molecule is present

mainly on T4 helper lymphocytes and to a lesser degree on macrophages. T helper lymphocytes have a central role in the immune system. When infection of these cells leads to their destruction, severe impairment of host defense mechanisms results and opportunistic infections and tumors that are the hallmark of AIDS occur.

Clinical Manifestations

HIV infection is a spectrum of diseases varying from acute infection, asymptomatic carriage, lymphadenopathy, AIDS-related complex or any of the opportunistic infections or neoplasms that characterize AIDS. Following exposure to the virus, approximately 40% of patients develop a mononucleosis-like illness characterized by fever, lymphadenopathy, night sweats and headache. Some patients develop acute aseptic meningoencephalitis. Tests for HIV antibody are usually negative during this initial illness, but patients have detectable virus or viral antigen in their blood and are infectious.

The time between infection and a detectable antibody response is known as the "window" period. Antibody tests (ELISA and Western Blot assays) become positive in most individuals between 6 and 12 weeks following infection, although they occasionally remain negative for as long as 8 months. The acute illness subsides in 1 to 3 weeks and most patients become asymptomatic carriers. Asymp-

Dr. Shamsuddin is a Fellow and Dr. Stapleton is an Assistant Professor of Internal Medicine, Division of Infectious Diseases at the University of Iowa College of Medicine.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF MARCH 1988

tomatic or mildly symptomatic patients comprise the majority of those infected and they form the major reservoir for spread of the virus.

Education directed at this population is the most important measure to limit virus transmission. In addition, changing high risk behaviors of infected individuals will decrease exposure to cofactors that may be important in enhancing progression of the disease.

Clinically, patients present with persistent generalized lymphadenopathy (PGL), AIDS-related Complex (ARC) or AIDS. PGL is defined as lymph node enlargement >1 cm in diameter involving 2 or more extralingual sites. The adenopathy must persist for at least 3 months without any current illness or drug use known to cause adenopathy. ARC is characterized by weight loss, diarrhea, fever, adenopathy, splenomegaly and a variety of mucocutaneous lesions including oral thrush, hairy leukoplakia and multidermatomal herpes-zoster. About 20% of African patients have a generalized papular pruritic eruption, the cause of which is not known.

Opportunistic Infections

The Centers for Disease Control (CDC) recently modified the case definition of AIDS to include HIV encephalopathy and wasting syndrome. As mentioned previously, the decrease in host defense mechanisms leads to opportunistic infections and tumors. Specific opportunistic infections depend on where patients live. *Pneumocystis carinii* pneumonia (PCP) is the most common presentation among Europeans and Americans, but is less common among Africans. Atypical mycobacteria are common among Americans but not among Africans where tuberculosis (TB) tends to predominate. Opportunistic infections occurring in AIDS include PCP, toxoplasmosis, cryptococcal infections, disseminated TB and atypical mycobacteria, diarrheal illness due to cryptosporidia and isospora, recurrent salmonella infections and candidal infections.

Tumors commonly found in AIDS include B cell lymphoma and Kaposi's sarcoma. Nervous system involvement in AIDS can occur regardless of the presence or absence of other manifestations. Neurologic findings include encephalitis with dementia, vacuolar myelopathy, peripheral neuropathy and polymy-

ositis. The wasting syndrome, which is defined as involuntary weight loss >10% body weight with chronic diarrhea or fever without a definable cause, is thought to directly result from HIV infection.

Progression of patients from asymptomatic carriage or PGL to AIDS occurs at the rate of 2-5% per year, and from ARC to AIDS at the rate of 6-20% or more per year. It has

"Developed as an anticancer drug in 1960, AZT (3'-azido-3' deoxythymidine, now called zidovudine) is the only treatment documented to prolong survival among AIDS patients."

been suggested that a variety of infectious and non-infectious cofactors are important in the progression from acquisition of the virus to the development of AIDS. Studies have documented a correlation between the development of AIDS and the presence of infections with sexually transmitted diseases (syphilis, gonorrhea, hepatitis B, CMV, Herpes Simplex virus), parasitic diseases (malaria, giardiasis, amebiasis) and repeated foreign antigenic stimulation (blood products or IV drugs). These "cofactors" all stimulate T lymphocytes. T cells stimulated *in vitro* are easier to infect with HIV. Stimulating T cells already infected with HIV leads to an increase in viral replication, hence increasing the possibility of infecting other-wise healthy T cells.

Patients vary in their ability to transmit the virus to sexual partners. This may be related to the presence and level of neutralizing antibody to HIV of the infected patient or to the carriage of defective virus that is unable to replicate. Clinical indicators that predict progression of HIV infection to AIDS include a T4 lymphocyte count of 400 or less, an elevated sedimentation rate, anemia (hb <13), oral thrush or hairy leukoplakia, HIV core antigenemia and elevated β 2 macroglobulinemia.

Treatment

Several steps in the HIV replication cycle have been targeted for development of antiviral agents. Agents that have been tested include inhibitors of viral adsorption or pene-

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tration (AL-721, peptide T, castanospermine), viral reverse transcriptase inhibitors (AZT, didoxycytosine, phosphonoformate, HPA-23, and suramin) and viral protein synthesis inhibitors (Ribavirin and interferon). There are over 70 drugs or combinations of drugs approved for safety and efficacy testing nationwide.

Developed as an anticancer drug in 1960, AZT (3'-azido-3'-deoxythymidine, now called zidovudine) is the only treatment documented to prolong survival among AIDS patients. AZT is 60% absorbed after oral intake and can penetrate the blood brain barrier in virustatic concentrations. It is phosphorylated by cellular kinases and as such is a competitive inhibitor of the viral reverse transcriptase. In a double blind placebo controlled trial, AZT was given to 140 patients post *P. carinii* pneumonia or with ARC. 137 control patients received placebo. The study was terminated at 24 weeks because of the significant improvement in mortality and morbidity in the AZT group.

Unfortunately, AZT has significant toxicity. Approximately 20% of recipients develop

"Patients vary in their ability to transmit the virus to sexual partners. This may be related to the pressure and level of neutralizing antibody to HIV of the infected patient or to the carriage of defective virus that is unable to replicate."

either granulocytopenia or anemia requiring transfusions. Concurrent use of acetaminophen (Tylenol) increases the risk of marrow toxicity probably due to interference of acetaminophen with hepatic glucuronidation of AZT. AZT is recommended for all patients who have developed PCP and symptomatic patients with T helper lymphocyte depletion. Whether AZT will be effective in the asymptomatic carrier population is not known. Because of its significant bone marrow toxicity, it is not currently recommended for such patients. Trials combining AZT with other agents are underway.

Another approach to AIDS treatment involves modulating the patients immune system. Alpha interferon, in addition to having an antiviral effect, is an immunomodulator. It

has been shown to induce remission in some patients with Kaposi's sarcoma and to decrease HIV shedding in those patients. Interleukin 2 is also under investigation. Bone marrow transplantation has been attempted in several patients with AIDS without success. Now that effective antiviral therapy is available this approach deserves reevaluation.

Transmission

Transmission of HIV occurs by 1 of 3 routes: sexual, parenteral and perinatal. 66% of the patients in the U.S. are homosexual men, 16% are IV drug users, 8% are both, 3% are hemophiliacs and recipients of blood transfusions, 4% are heterosexuals and 3% have no identifiable risk. The same pattern applies to European countries and Australia, though figures vary. In the U.S., men with AIDS outnumber women 10:1. This is misleading however, as seroprevalence studies demonstrate a male to female ratio of 2.3:1. We should therefore expect to see a shift in the ratio of men to women developing AIDS in ensuing years. Infected women are usually IV drug users or sexual partners of infected men. Due to blood screening programs, transfusion-related cases have markedly decreased. Seroprevalence of the general population is low, estimated to be 9 to 23 per million.

In Africa, there is a different epidemiologic picture. Males and females are equally affected and heterosexual transmission appears to be the major mode of spread. Seroprevalence of the general population is high, estimated at 1%. Due to the limited resources of these countries, screening of blood is not widely prevalent and infection via this route continues. Because infected women are of child bearing age, perinatal transmission is common. A third pattern of HIV infection emerges in the Middle East and Asia where there are few reported cases, most acquired through imported blood products or sexual contact abroad.

The virus is most efficiently transmitted when it is cell-associated. Though it can be isolated from tears, saliva and sweat, transmission by these routes has not been documented. Casual transmission of the virus within households or work has not been documented. The most direct evidence against casual transmission of HIV is derived from

(Please turn to page 128)

studies of household contacts of patients afflicted with AIDS. In one study, 101 nonsexual, household contacts of patients with AIDS were evaluated. The study participants had lived with the patients for at least 14 months before their housemate developed AIDS and had intense exposure during that time. Types of exposures included hugging (79%), kissing on the cheek (83%), kissing on the lips (17%), sharing eating utensils (46%), sharing razors (9%) and cleaning commonly used toilets (49%). No transmission of HIV occurred except for a child who was infected at birth.

At least 7 additional studies of household contacts of infected patients have been reported. These investigations involve the families of hemophiliacs, IV drug users, homosexuals, Africans and siblings of children with AIDS. None of these studies (over 600 household contacts) has shown transmission of the virus unless there is sexual contact, needle sharing or perinatal transmission.

Transmission of HIV to health care workers occurs by accidental inoculation of infected blood or direct exposure of infected blood to mucous membranes or disrupted skin. Current predictions estimate that 0.5% of health care workers who sustain an accidental percutaneous or mucous membrane exposure to infected blood will become infected with the virus. The CDC has published guidelines for prevention of HIV transmission in health care workers. These were not followed in the majority of the reported cases of accidental infection in health care workers.

Summary

In this overview, we have discussed the spectrum of clinical manifestations, the mode of transmission and current status of therapy directed against HIV. Although the consequences of AIDS are devastating and the infection is increasingly encountered by physicians in Iowa, our understanding of HIV pathogenesis is rapidly expanding. This should allow development of better educational programs and eventually a vaccine to slow the spread of virus transmission and lead to improved treatments for those already infected.

References

References noted in this article are available either from the authors or the editors of *IOWA MEDICINE*.

YOCON[®]

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubiaceae and related trees. Also in *Rauwolfia Serpentina* (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral alpha-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

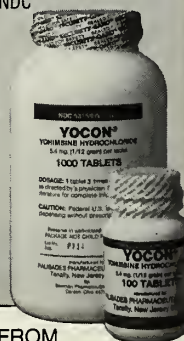
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

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1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
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Marion E. Alberts, M.D.

The Editor Comments



The Scourge of the Eighties

MEDICAL HISTORY TELLS OF recurring epidemics and plagues. The Black Death of the mid-1300's killed three-fourths of the people of an area in south France. Recent history reminds us of the poliomyelitis epidemics in the United States in the mid-1900's. Now in the 1980's, we face another epidemic of another type. The first reports received by the Centers for Disease Control of the incidence of AIDS in the United States was in 1981. In 1981, 265 people in the United States had AIDS. By mid-1987 more than 40,000 cases had been reported.

AIDS (acquired immunodeficiency syndrome) in the U.S. originally was reported to involve homosexual men and intravenous drug abusers. Then, Haitians and persons afflicted with hemophilia were among the victims. Soon it was known the danger stemmed not from who you were, but from what you did. The virus can attack anyone and kill any human it infects. AIDS has become a national epidemic and is being transmitted at an increasing rate to the heterosexual population. Known cases from 1981 through mid-1987 reported to CDC were 42,193; 23,638 have died. AIDS has become a worldwide epidemic with 114 countries reporting cases by mid-1987. It is estimated as many as 10 million people worldwide may be infected with the virus.

This epidemic has reached proportions immense enough to challenge the medical profession. Our medical societies are promulgating efforts to educate the profession as well as the general population. No age group is

immune. The ugly specter of "failure to diagnose" faces all of us. It behooves each and every physician, nurse, laboratory technologist, any and all health care persons to be aware of the manifestations of the viral threat.

This issue of *IOWA MEDICINE* endeavors to alert our profession again to the AIDS dilemma. We do not apologize for presenting another reminder to the medical profession about AIDS, even though JAMA, other journals and health organizations have provided much educational material about this scourge. It is our responsibility to know the true meaning of the syndrome as well as dispel much of the misinformation that has come from poorly informed sources.

AIDS is transmitted in only a few known ways: sexual contact, blood contamination, and from mother to child. Casual contact with other persons, public restrooms, gymnastics, classrooms and public telephones are not sources of AIDS. Mosquitoes have been acquitted as a spread of AIDS as they were of poliomyelitis when that devastating frightening disease caused panic in the U.S. during the early 1950's.

Here we go again; another medical crisis. The population cries out for quick answers. Researchers seek a vaccine. Physicians must recognize the syndrome. Education must emphasize facts, dispel fear and promote self-care. This is a worldwide problem and there is no room for panic or unproven declarations.

Together we, the medical profession, researchers, government authorities, and the population as a whole can conquer another "plague." Such have been conquered before and others will face future populations. — M.E.A.

Richard M. Caplan, M.D.

CME Notebook



Will AIDS Cause Semmelweis to Triumph at Last?

MOST PHYSICIANS KNOW the story of Ignaz Semmelweis — or maybe that's only my hope. You remember, don't you — he's the Hungarian physician who concluded in the late 1840's that a connection existed between the fact that an extreme number of women died of childbed fever at his hospital, and the fact that the doctors who delivered them often arrived at the delivery table directly from performing an autopsy in the hospital morgue. Remember, also, this was clearly before the work of Pasteur, Virchow and others led the medical world to understand the bacterial origin of infection.

Semmelweis's observations and hunches led him into a campaign to get medical students, doctors and nurses who attended the parturient women to wash their hands before starting the delivery. He was laughed at, ignored, even reviled. As a result of that rejection, so the story goes, he grew despondent and a few years later died of suicide in an insane asylum. His story is one of the great dramas, tragedies, of medical history. This drastic encapsulation surely oversimplifies the historical realities to a painful degree. But the story — and the heroic stature also of Dr. Oliver Wendell Holmes, who urged the same sanitary behavior in this country at about the same time — does ring a bell, doesn't it? (If by chance it doesn't, it's a fascinating tale, well worth your reading time.)

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

I've spent most of my medical experience, whether inpatient or outpatient, believing that Semmelweis and Pasteur and Lister were absolutely right, and feeling pretty smug with myself for thinking I'd been doing the right thing about my own hand washing all these years. Recently, though, a bombshell has hit me, coming out of the research of infection-control specialists and epidemiologists. Their evidence now persuades me of the need to wash my hands after *every* patient encounter. The urgency is especially great regarding inpatients and the need to protect them from a variety of infections I might bring them.

My consciousness about my personal safety was further alerted a few years ago regarding hepatitis-B. But now the really urgent message has hit me in regard to AIDS. The role of protective garments and hand washing is now a part of the international education crisis surrounding AIDS. We physicians must learn, know, but above all, *behave* with appropriate attention to protecting ourselves and others regarding bodily fluids and wastes from *everyone* we encounter. We must help our hospitals and office personnel to understand what to do, and also what is not effective or necessary. We need to stay informed and zealously teach our patients, colleagues, friends and the entire public the facts about AIDS. And of course, we must set the correct example in our own actions.

What I'm saying means that, yes, we must all make some changes. It will mean an increase in expenses of money and time, and will induce hand dermatitis in a few of us. But such costs seem trivial compared to the personal and social alternative. Maybe it seems unfair to foster the profits of those who manufacture and sell rubber gloves, but true it re-

mains that one person's poison is always another's meat (short of total nuclear annihilation).

Changing our knowledge, attitudes and behavior is what education is all about. I don't mean that we must identify the AIDS status of each patient, and then discriminate against those who are sick from the virus or have a positive blood test. No, we must simply behave appropriately as we deal with *all* patients and properly isolate their bodily substances. The risk of contracting AIDS from casual medical encounters is exceedingly slight. But the time is now to protect ourselves and our patients by behaving finally, 140 years later, so as to let the ghost of Semmelweis rest in peace.

Letters to the Editor

Osteoporosis Detection

In the January 1988 issue of *IOWA MEDICINE* the nice, brief review of osteoporosis by Dr. Patrick M. Sullivan was timely and greatly appreciated. However, in his section on diagnostic tests he mentioned that dual photon absorptiometry was one of the newer techniques which had high precision and accuracy but that the method was very expensive and not in wide use. In the overall scheme of these charges for diagnostic procedures this would certainly be one of the less expensive procedures in use in Nuclear Medicine or many Radiology Departments. Certainly, it is in our Nuclear Medicine Department. Furthermore, there are several thousand of these instruments in use in this country. The main problem that limits its usage is that Medicare, for some reason only they can rationalize, refuses to pay for this valuable diagnostic procedure. Because of this, osteoporosis detection is frequently delayed and the possible benefits of therapy will be difficult to quantitate. — *Alexander Ervanian, M.D., Des Moines, Iowa.*

Dr. Ervanian's points are well taken. His clarification on the regional availability of dual photon absorptiometry is helpful. We can see why this is a relatively expensive procedure if there is no third party reimbursement. — *Patrick M. Sullivan, M.D., Des Moines, Iowa.*

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Practice Management

Tax Free Fringe Benefits: New Restrictions

TAX FREE FRINGE BENEFITS are a significant aspect of compensation to owner-employees of an incorporated business. These benefits include insured and uninsured accident and health benefits, group life insurance coverage, group legal services plans, educational assistance programs and dependent care assistance. Prior to the Tax Reform Act of 1986, each of these benefits had a set of non-discrimination rules which, if violated, resulted in taxation of benefits under a particular plan. The new law replaces these provisions with uniform non-discrimination rules.

The law extends discrimination provisions similar to those in the retirement plan area to fringe benefits. Violation of the new rules results in taxation of "excess benefits" to highly compensated employees. Failure to report excess benefits results in a severe additional tax on total benefits to an employee.

The new law was to apply to the first plan year after 1987 or 3 months after IRS regulations are issued. At this time no regulations have been issued. For employers with a calendar year plan this means the rules will not be effective until 1989.

Eligibility Tests

At least 50% of eligible employees must not be highly compensated. This test will be satisfied if the percentage of eligible highly compensated employees does not exceed the percentage of eligible non-highly compensated employees.

The second eligibility test is the 90/50 test. At least 90% of the non-highly compensated

group must be provided with at least 50% of the highest benefit available to any highly compensated employee.

The third eligibility test is the plan cannot contain discriminatory provisions relating to eligibility.

Benefits Tests

The average benefit received by a non-highly compensated employee must be at least 75% of the average benefit received by highly compensated employees. How different benefits will be valued is uncertain at this time pending the issuance of IRS regulations.

Simplified Test

An alternative to these tests is available for health and group term life insurance benefits. The eligibility and benefits test are met if at least 80% of the non-highly compensated employees are *covered* under the plan and the benefits test is met.

Other Requirements

Certain formalities that may have been lacking in the past must now be met for the plan to qualify. These are: the plan must be in writing; employee's rights under the plan must be legally enforceable; the plan must be for the exclusive benefit of employees (as opposed to owners); the plan must be established with the intention that it will be maintained indefinitely; certain plan information returns will be required to be filed with IRS.

These requirements will force many employers to consider new options; conform the plan to the new requirements, drop the plan or operate the plan on a discriminatory basis. Conforming the plan to the new requirements may result in increased benefit costs for non-owner employees. Dropping a plan may necessitate increased employee compensation. If the plan is operated on a discriminatory basis, highly compensated employees will be taxed for "excess benefits."

This article is authored by Paul Hayes, a tax partner with McGladrey, Hendrickson and Pullen, Des Moines.

Iowa Department of Public Health

AIDS Task Force

AQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) has become a leading health concern for the nation and Iowa. House File 310, passed by the 1987 legislature, requires the Department of Public Health to establish a central registry for AIDS, provide for confidential testing and promote public education efforts.

An AIDS Task Force was established by the legislative council and the following members appointed for a 2-year term: Senator Al Sturgeon, Sioux City, Co-chairperson; Representative Ralph Rosenberg, Ames, Co-chairperson; Senator David Readinger, Des Moines; Representative Mike Van Camp, Davenport; Ms. Elizabeth Coss, R.N., Des Moines; Alex Ervanian, M.D., Des Moines; Mr. Clark McDonald, Des Moines; Ms. Carla Mehus, Des Moines; Mr. John Schmacker, Des Moines, and Ms. Carolyn Scholl, Des Moines.

The task force is charged with reviewing AIDS related issues including health care costs, testing and detection.

Initially authorized for 3 meetings, the task force met October 23, November 10, and December 18, 1987. Upon request of the task force, the Legislative Council authorized a fourth meeting which was held January 5, 1988. A variety of public and private organizations have presented AIDS information to the task force.

Topics discussed included: characteristics of AIDS; mandatory testing; care of AIDS patients; confidentiality, civil rights and discrimination; positions of professional association concerning AIDS; educational curriculum standards; protection against false advertising and fraudulent practices related to AIDS.

Recommendations

The task force made the following recommendations after careful consideration of the testimony presented:

- The Iowa Department of Human Services initiate the process to obtain a waiver for provision of alternative service to persons with AIDS or an AIDS-related condition.

- The Legislative Service Bureau draft legislation which reflects the recommendations of the Office of the Attorney General regarding false advertising and fraudulent practices relative to AIDS drugs, devices and cosmetics.

Also, the task force reviewed bill proposals relating to AIDS. The following bills were approved with recommendation by the task force for consideration by the General Assembly:

- An act relating to the certification of clinical laboratories and blood banks which perform human immunodeficiency virus screening or confirmatory testing.

- An act relating to the admission to or retention in a health care facility of a patient with positive AIDS test results or a diagnosis of AIDS or a related condition.

- An act requiring informed consent prior to testing a person for antibodies to the human immunodeficiency virus and making penalties applicable.

- An act requiring accredited elementary and secondary schools to provide, within the health education curricula, instruction concerning AIDS.

- An act making appropriations for the fiscal year beginning July 1, 1998, to the Iowa Department of Public Health for implementation of the comprehensive AIDS prevention and intervention plan.

- An act relating to a comprehensive AIDS prevention and intervention plan.

- An act relating to the civil rights of persons with a condition relating to AIDS and including prohibition of testing, with respect

IOWA DEPARTMENT OF PUBLIC HEALTH

(Continued from page 137)

to the employment of persons, for a condition related to AIDS, and making remedial provisions of the civil rights law applicable.

- An act relating to confidentiality of human immunodeficiency virus-related matters and providing penalties.

- An act prohibiting the disclosure of AIDS-related testing and test results by certain persons in the insurance industry and providing penalties.

Bill proposals concerning civil rights and confidentiality issues are being examined by the House of Representative's Human Resource Committee. All other AIDS-related proposals from the Task Force are being examined by the Senate Human Resource Committee.

The AIDS Task Force will continue to study AIDS-related issues during the next interim session. They plan to make additional recommendations to the General Assembly.

January 1988 Morbidity Report

Disease	Jan. 1988 Total	1988 to Date	1987 to Date	Most Jan. Cases Reported From These Counties	Disease	Jan. 1988 Total	1988 to Date	1987 to Date	Most Jan. Cases Reported From These Counties
AIDS	2	2	0	NA	Influenza-like illness (URI)	5232	5232	4470	Scattered
Amebiasis	2	2	3	Boone, Story	Legionellosis	2	2	1	Wayne, Wapello
Brucellosis	0	0	1		Malaria	0	0	0	
Chickenpox	997	997	836	Scattered	Meningitis				
Campylobacter	12	12	6	Scattered	aseptic	3	3	1	Johnson, Linn, Polk
Cytomegalovirus	1	1	1	Scott	bacterial	18	18	8	Scattered
Eatons Agent					meningococcal	0	0	2	
Infection	8	8	12	Scattered	Mumps	8	8	19	Scattered
Encephalitis, viral	3	3	0	Johnson, Linn, Polk	Pertussis	3	3	2	Decatur, Dubuque, Polk
Erythema					Rabies in animals	11	11	13	Scattered
Infectiosum	0	0	0		Reye Syndrome	0	0	0	
Gastroenteritis (GIV)	2393	2393	2289	Scattered	Rheumatic Fever	0	0	0	
Giardiasis	26	26	24	Scattered	Rubella				
Hepatitis, A	5	5	5	Black Hawk, Plymouth	(German measles)	0	0	0	
Hepatitis, B	10	10	11	Black Hawk, Marshall, Mills, Polk, Pottawattamie	Measles	0	0	0	
Hepatitis, Non A-B	2	2	2	Fayette	Salmonellosis	4	4	10	Polk, Ringgold, Scott
Hepatitis type unspecified	0	0	1		Shigellosis	20	20	3	Scattered
Herpes Simplex	81	81	77	Scattered	Toxic Shock Syndrome	1	1	1	Polk
Herpes Zoster	0	0	0		Tuberculosis				
Histoplasmosis	1	1	1	Polk	total ill	3	3	5	Polk, Scott, Webster
Infectious mononucleosis	4	4	23	Benton, Linn, Warren, Jones	bact. pos.	2	2	2	Polk, Scott
Influenza, lab confirmed	15	15	36	Scattered	Typhoid Fever	0	0	0	
					Venereal diseases				
					Gonorrhea	188	188	265	Scattered
					Chlamydia	177	177	252	Scattered
					Syphilis	1	1	1	Clinton
					Other Non-Reportable Diseases: Guillian-Barre Syndrome — 1, Benton.				

About Iowa Physicians

Dr. Ronnie Hawkins recently began medical practice at Mercy-Campus Medical Clinic, Des Moines. Dr. Hawkins has been practicing in the Des Moines area since 1983. **Dr. Douglas H. McNeill** has joined the staff at Keokuk County Medical Clinic. Dr. McNeill received the M.D. degree at Columbia University College of Physicians and Surgeons in New York City and has been teaching and practicing medicine for 15 years. **Drs. Cam Campbell, James Feeley** and **Ann Goodenberger** have joined the Internal Medicine Towncrest and the Mercy Medical staff in Iowa City. Dr. Campbell received the M.D. degree at the University of Southern California School of Med-

icine, Los Angeles and recently completed a fellowship in cardiology at the U. of I. College of Medicine. Dr. Feeley received the M.D. degree at the University of Illinois-Chicago Medical School and recently completed a fellowship at the U. of I. College of Medicine. Dr. Goodenberger received the M.D. degree at the U. of I. College of Medicine. Prior to joining the Internal Medicine Towncrest group, Dr. Goodenberger practiced medicine in Tacoma, Washington and Bakersfield, California. **Dr. Roswell M. Johnston** has joined **Dr. John R. Walker** and **Dr. James E. Crouse** in the practice of orthopedic surgery in Waterloo. Dr.

(Please turn to page 140)



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Johnston received the D.O. degree at the University of Health Sciences, College of Osteopathic Medicine in Kansas City, Missouri. He was Chief of Orthopedics at Clark Air Force Base in the Philippines and at the Air Force Academy before joining the Waterloo practice.

Dr. Dave Van Gorp has joined the hospital staff in Orange City. Dr. Van Gorp received the M.D. degree from the U. of I. College of Medicine and is a family practice specialist. Prior to moving to Orange City, Dr. Van Gorp practiced medicine at the Buena Vista Clinic in Storm Lake. **Dr. Milton F. Austin** has joined **Dr. Wilson Davis** and **Dr. Thomas Hakes** at Internal Medicine of Keokuk, P.C. Dr. Austin received the M.D. degree from Yale University School of Medicine, New Haven, Connecticut and completed his residency in internal medicine with the University of Chicago Hospitals and Clinics. Prior to joining the practice in Keokuk, Dr. Austin was associated with General Internal Medicine at the NorthCare Medical Group in Evanston, Illinois.

Deaths

Dr. Robert C. Hardin, 74, Iowa City, died January 2, at U. of I. Hospitals. Dr. Hardin was a former dean of the U. of I. College of Medicine and vice-president for Health Affairs. He received the M.D. degree from the U. of I. and retired as professor of internal medicine and dean emeritus. Dr. Hardin was a recipient of the Distinguished Alumni Achievement Award — the highest honor bestowed by the University.

Dr. Aileen E. Mathiasen-Sciortino, 71, Council Bluffs, died January 6, at a local hospital. Dr. Mathiasen-Sciortino received the M.D. degree from Creighton University School of Medicine in Omaha, Nebraska and interned at Mercy Hospital in Des Moines. She practiced medicine at the Cogley Clinic in Council Bluffs and was the first woman doctor elected president of Mercy Hospital, also in Council Bluffs.



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In the Public Interest

AIDS Resource List

EDITOR'S NOTE: There are many people and agencies who serve as AIDS information sources. We have listed only a few. For more information, contact IMS headquarters. Also, a new "AIDS Iowa Information and Resource Manual" is available from the Iowa Department of Public Health's Division of Disease Prevention.

American Foundation for AIDS Research
900 Wilshire Blvd., 2nd Floor
Los Angeles, CA 90036 213/857-5900

AIDS Resource Center
235 W. 18th St.
New York, NY 10011 212/206-1414

Centers for Disease Control
AIDS Activity
Building 6, Room 292
1600 Clifton Road
Atlanta, GA 30333 800/342-AIDS

American Red Cross
AIDS Public Education
431 18th St. NW
Washington, D.C. 20006 202/639-3197

National AIDS Network
1012 14th St. NW
Washington, D.C. 20005 202/347-0390

National Lesbian and Gay Health Foundation
PO Box 65472
Washington, D.C. 20035 202/332-5939

AIDS Education Program
Iowa Dept. of Public Health
Lucas State Office Building
Des Moines, IA 50319 515/281-4938
AIDS Hotline: 800/532-3301

AIDS Risk Study, Univ. of Iowa
Family Practice Clinic, Steiner Bldg.
Iowa City, IA 52242 319/356-3949

Central Iowa AIDS Project
2116 Grand Ave.
Des Moines, IA 50312
Carolyn Scholl: 515/243-7681

Johnson County AIDS Coal.
321 East 1st St.
Iowa City, IA 52240
Dale Anthony: 319/337-0661

Rapid AIDS Project
3601 42nd St. NE
Cedar Rapids, IA 52402
Betsy Pratt: 319/393-3500

Quad Cities AIDS Coal.
605 Main St., Room 224
Davenport, IA 52803
Danette Simons: 319/326-8618

AIDS Coal. of NE Iowa
2530 University Ave.
Waterloo, IA 50701
Angie Turner: 319/234-6831

AIDS Coal. of Story Co.
50 Carver Hall
Ames, IA 50011
Karen Frees: 515/294-1663

Iowa 24-Hr AIDS Hotline:
800/445-2437

March 1988

Iowa Medicine

President's Privilege



Making IMS Policy

APRIL 22-24 PHYSICIANS from across Iowa will gather in Des Moines for the annual IMS Scientific Session and House of Delegates meeting. This event is organized medicine at its best.

Those attending the Scientific Session will learn about the very latest advances in medical technologies and treatments. They will explore important health care issues from new perspectives. They will add to the store of knowledge that translates into high quality medical care in Iowa.

Physicians from every part of Iowa who represent their colleagues in the IMS House of Delegates will be faced with the momentous task of formulating IMS policy for the coming year. They will consider resolutions submitted by councilor districts and county medical societies, hear testimony and make appropriate recommendations.

In case you think this is an easy task, consider just a few of the issues to be taken up by this year's House . . . Medicare assignment, peer review, AIDS testing, HCFA's review criteria and unified membership. Consider also that delegates must represent the opinions of their local peers and strike a delicate balance for the good of the majority. Add to that the fact that IMS policy is closely scrutinized by public health care policy makers.

I take off my hat to the 200-plus physicians who give their time and energy to participate in this process and to their colleagues back

home who are the backbone of grassroots IMS activity. These physicians and thousands before them have made the IMS a vital and well-respected organization.

I should also note that this month's *IOWA MEDICINE* is, according to tradition, dedicated to the University of Iowa College of Medicine. Even if you did not attend the University of Iowa, I believe you'll thoroughly enjoy this glimpse at what medical education is like today. You'll find that some things have changed, but others remain very much the same.

I salute the physicians at the College of Medicine who play such an important role in delivery of health care in Iowa.

A handwritten signature in dark ink, appearing to read "D J Walter MD". The signature is fluid and cursive.

Dennis J. Walter, M.D.
President

The Making of a Doctor — 1988

LONG HOURS OF READING are still very much part of the process. So are the first team efforts in gross anatomy lab, the suppressed excitement of the operating room and the camaraderie that intensifies with each passing year.

But learning to be a doctor today in the University of Iowa College of Medicine also involves interacting with microcomputers which toss tough questions at the medical student. It means intense discussions in the first-year "Human Dimensions in Medicine" course to help the freshman develop an early perspective about his or her role in medicine.

How to sort, teach and assimilate the glut of new knowledge pouring from laboratories and clinics is a major problem confronting medical educators and students. New technology intensifies that problem even as it helps solve it.

Faculty are grateful for one constant in their world of rapid change: the willingness of Iowa practitioners to lend their experience and skills to the task of educating future doctors. Even though Iowa's College of Medicine is one of the nation's larger medical schools (700 students, 500 full-time faculty and 600-plus residents and fellows in training) the making of a doctor commands the best efforts of both academic and professional worlds.

From Books to Patients

The first 3 semesters of instruction give the new medical student a strong foundation in basic sciences and a thoughtful approach to the field. Many students spend much of the summer between their first and second years in an Iowa community hospital or at the side of practicing physicians who serve as their preceptors.

"Introduction to Clinical Medicine" fills the fourth semester. Students come face to face with patient care, learning the skills of history taking and physical examination.

The third-year medical student joins the patient care team, participating in many supervised patient care experiences. Required clinical clerkships are internal medicine (9 weeks); surgery, pediatrics, obstetrics and gynecology, psychiatry (6 weeks each); anesthesia, dermatology, neurology, otolaryngology, orthopaedics, urology (2 weeks each) and a family practice preceptorship in an Iowa community (2 weeks). While most clinical experience is gained in University Hospitals and Clinics, clerkships may be undertaken in affiliated hospitals and ambulatory care centers across Iowa.

Fourth-year students have many opportunities to pursue individual interests and experience health care in different settings. They may sample broadly or focus intensely on a particular interest. They may pursue advanced courses in specialty areas, community-based clerkships in primary care or additional academic work and graduate study on or away from the campus.

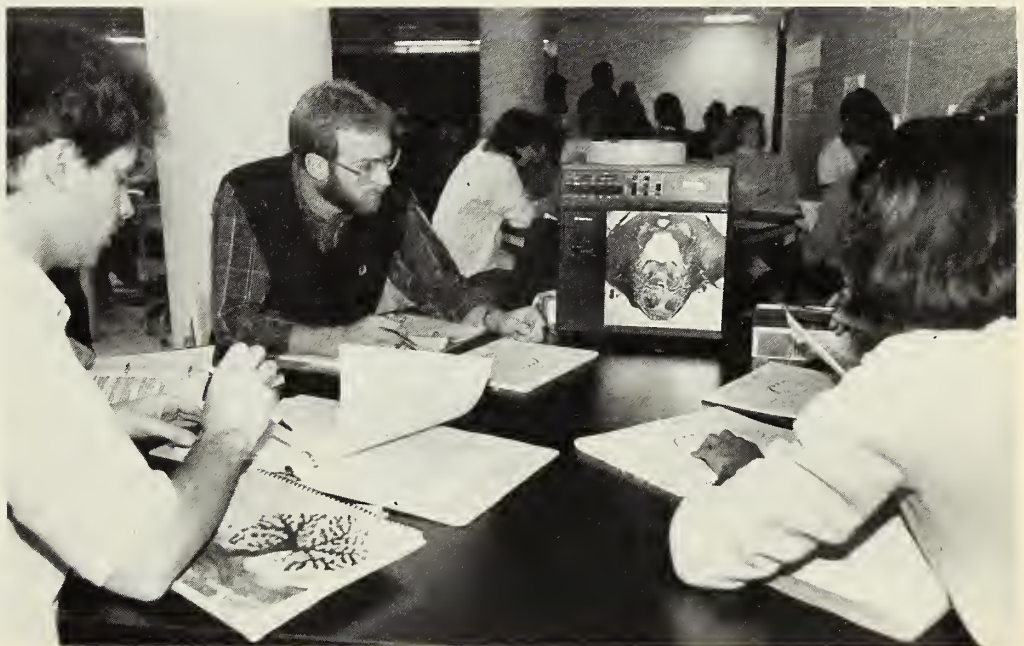
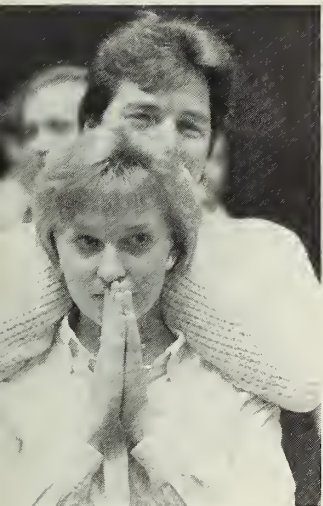
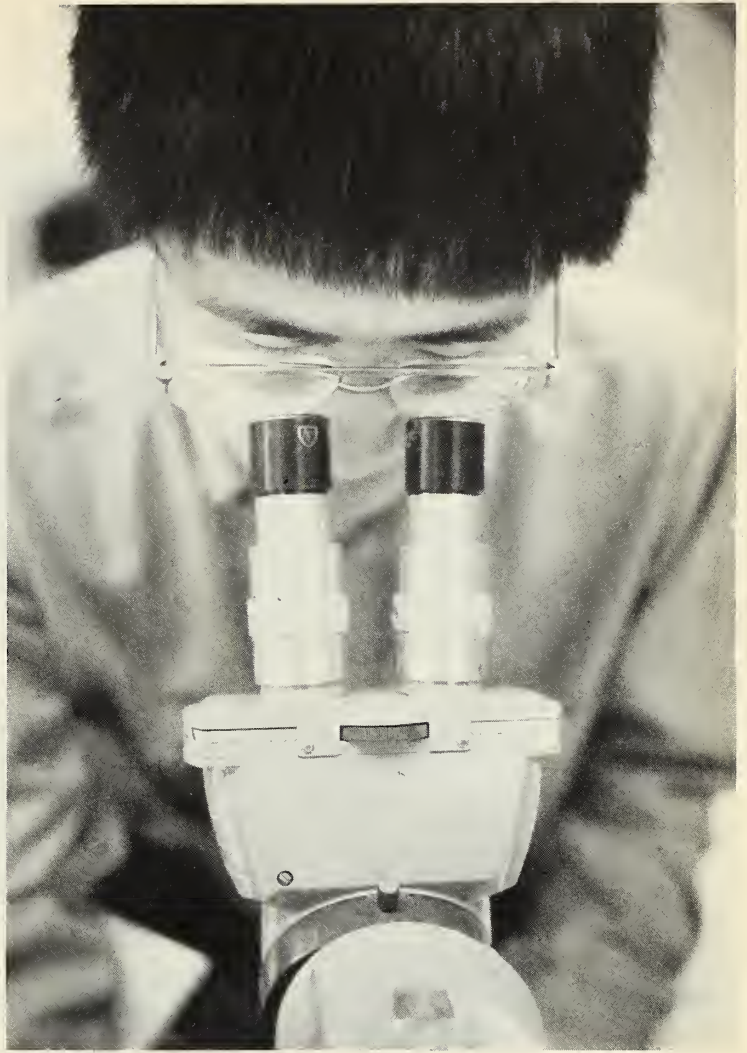
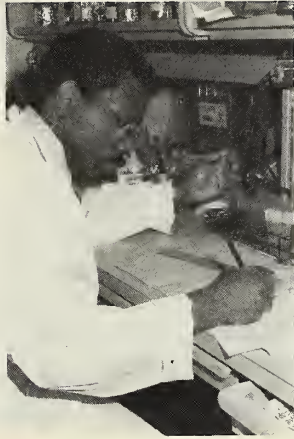
Future Faculty

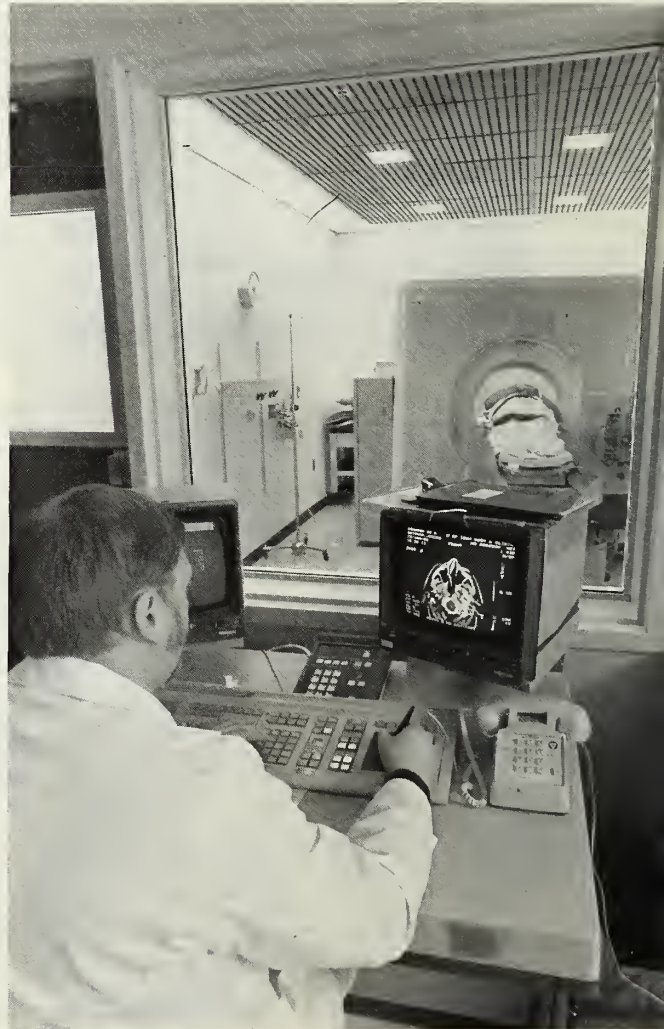
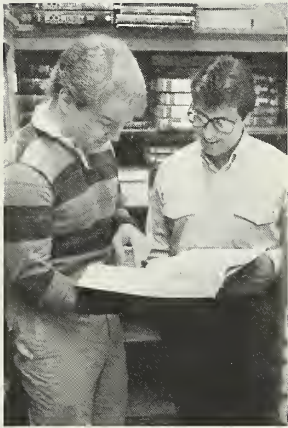
A handful of freshmen veer off into somewhat different schedules, spending their first summer doing biomedical research and their

(Please turn to page 160)

Photographs by Mary Abboud-Kamps, Tom Jorgensen, Jeff Meyers, Warren Paris, Mark Sitterson and Leah Zipf. Photo layout by Amy Roach.

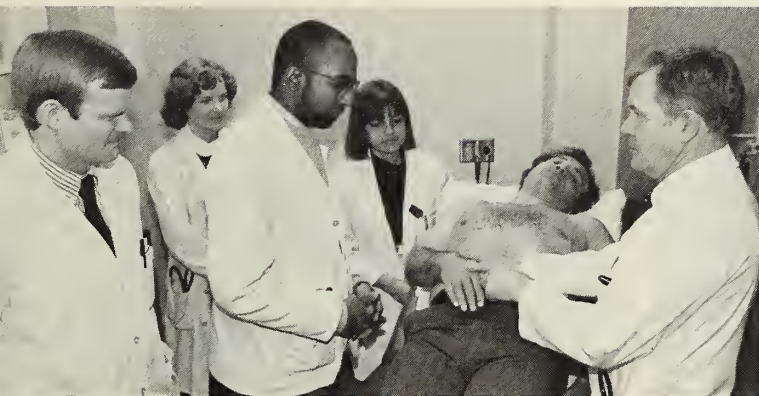
Clockwise from upper right: Suthee Thumasathit (M1, Iowa City) studying for General Pathology course; Mark Jabro (M1, Council Bluffs) and Scott Smith (M1, Manly) in neuroanatomy lab; Carolyn Bohnke (M4 '87, Garner) and husband Tom Becker (M4 '87, Edina, Mn.) await their "Match Day" assignments to residencies. Both are in their first year of residency at Indiana University Medical Center, Indianapolis, Ind. Bohnke is a resident in obstetrics and gynecology and Becker is a resident in pediatrics. Kenny Hammer opens wide for Brian Burnikel (M2, Cresco) to examine his throat; David Moore (M4, Iowa City) in VA Medical Center laboratory.



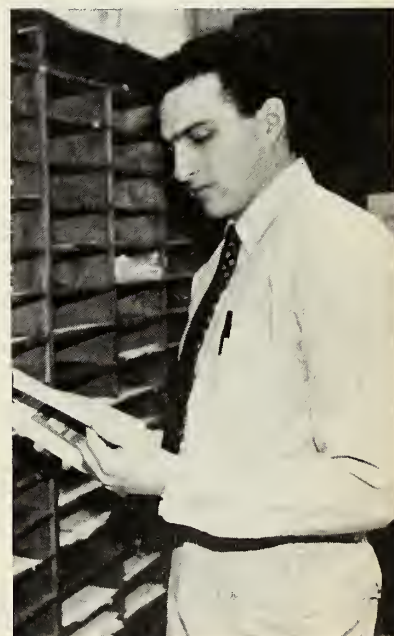




OPPOSITE PAGE, clockwise from upper left: M2s Jon Dankle (Clear Lake) and Michael Martinez (Altadena, Calif.) browse in the medical student bookstore, Medical Laboratories Building; Melinda Smith (M4, Muscatine) checks her patient's X-rays; this CT-scanner is only one of several state-of-the-art imaging devices with which today's medical students become familiar during their clinical services in University Hospitals; Cynthia Grosskreutz (M5G, Shawnee Mission, Kan.) is one of 50 students in Iowa's combined M.D./Ph.D. program and John Tsuang (M4 '87, Iowa City) is amused at his date's deep "dip" during the annual Medical Student Waltz. Tsuang is in his first year of a psychiatry residency at Stony Brook Teaching Hospitals, Stony Brook, N.Y.

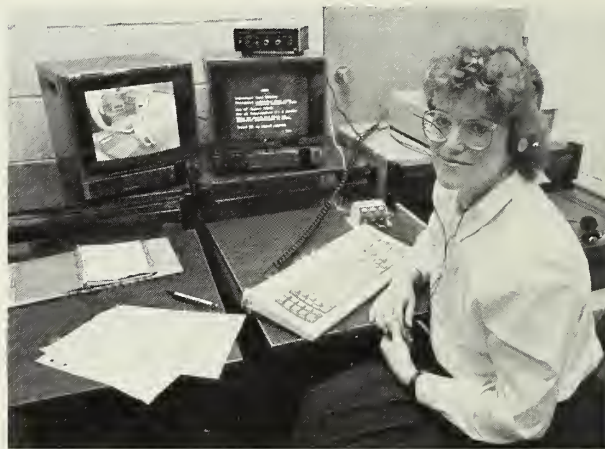


THIS PAGE, clockwise from upper left: M2s Joe Ofstedal (Iowa City), Jim Wentzien (Fort Madison), Wendi Harris (Ames) and Linda Madson (Fort Dodge) lay out the next issue of *Vital Signs*, the medical student newspaper; Matt Jiminez (M3, Salt Lake City, Utah) finds still more reading to do during one of the several visits he makes each day to the student mailroom; David Moore (A4, Iowa City) examines patient James Summy at the Veterans Administration Medical Center, Iowa City; bedside education concerning arthritis involves (from left) Nils Erickson, M.D., fellow; Jane Morgan, M.D., clinical associate; Roderick Smith, M4, Jackson, Miss.; Suha Hajjar, M4, American University of Beirut; Victor Sokol, patient; and M. Paul Strottman, M.D., associate professor of internal medicine.





Clockwise from upper left: Anne Duffy (M1, West Des Moines) studies in Health Science Library; Tamara Abbas (M3, Coralville) uses a new interactive videodisc teaching program to help her learn about assessing neuromotor dysfunction in infants; Matt Jiminez (M3, Salt Lake City, Utah) scrubs for the operating room, part of his orthopaedic surgery rotation; preparing to practice gynecologic procedures on simulated patient Deb Pearson are (left to right) Mary Porter (teacher/patient advocate); Rita Lewis (M2, Chicago); Jim VanRhee (PA student, Grand Rapids, Mich.); Cory Dietz (M2, Maquoketa) and Todd Johnson (M2, Humboldt).

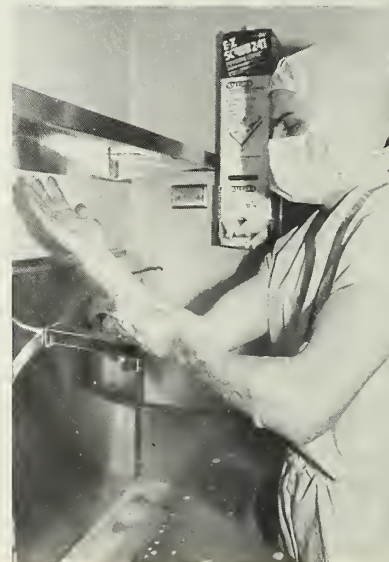


(Continued from page 156)

second summer in clinical clerkships. These are the enrollees in the Medical Scientist Training Program, which prepares highly qualified individuals for careers in academic medicine. They'll earn M.D. and Ph.D. degrees during 6-7 years in Iowa's MSTP program.

Throughout their clinical experiences, undergraduate students learn from residents, and negotiating for residency appointments is a significant activity in the senior year. "Match Day" in late March brings word of where they will take residency training. A key indicator of the high regard for Iowa medical education is the fact that, every year, about two-thirds of its graduates match with their first choice of residency programs and 85% are awarded one of their first 3 choices.

On the preceding pages, the camera catches a few of the many aspects of medical education at Iowa today.



Learning to Interact With Colleagues — Statewide!

PAUL M. SEEBOHM, M.D.
CHARLES E. DRISCOLL, M.D.
Iowa City, Iowa

INTRODUCTION: When they come to the staff dining room July 1 for the first of several hundred breakfasts they'll eat at University Hospitals during the next 2 to 5 years, incoming residents are very aware they're taking another big step on the road to becoming the kind of doctors they want to be.

Some already "know the territory," having trod hundreds of miles up and down those same corridors while progressing from freshman to senior status in the University of Iowa College of Medicine. But most of the residents will be finding their way in a new environment, one that probably differs from the teaching hospitals and medical schools from which they just graduated, or the practices they left to pursue new specialties.

At that July 1 breakfast they will meet their counterparts in other departments and department heads and House Staff Affairs administrators. They'll be welcomed, informed, cautioned, encouraged, inspired.

And they will be introduced to one of the most basic precepts by which they must practice: **communicate with the colleagues who refer patients to you.**

This principle has been laid down at perhaps the last 10 Housestaff Welcoming Breakfasts by Paul M. Seebohm, M.D., senior faculty member and administrator whose sincerity and wisdom have earned him the respect of the entire profession. An internist-allergist who is Advisor to the Dean of the UI

College of Medicine, Dr. Seebohm retired recently from the Executive Associate Deanship after serving in that position 16 years. A former president of the Iowa Medical Society, he has helped the profession interface with a variety of lay and political interests through service on the State Board of Health, the Iowa Health Systems Agency, Iowa Foundation for Medical Care, the Governor's Advisory Committee on Organ Transplants and, currently, the Health Policy Corporation of Iowa.

In addition to College of Medicine faculty members, Iowa has about 3,000 practicing physicians — over half of whom graduated from the College or took their residency training in University Hospitals. Dr. Seebohm estimates "about half" of these have heard his now-traditional "Intraprofessional Relations" comments at the Housestaff Welcoming Breakfasts.

Dr. Seebohm's annual remarks are reprinted here. Following those comments, Charles E. Driscoll, M.D., head of the UI Department of Family Practice, discusses the need for referring physicians across Iowa to effectively communicate with physicians to whom referrals are made.

IN TODAY'S MEDICAL CLIMATE, patients with significant diseases are certain to see more than one physician.

In this hospital, that is just about every patient. All your patients will have at least one other physician — the one who referred them here to you.

Transferring patients between physicians is a risky business for the patient if the physicians do not communicate with each other.

Iowa has about 3,000 physicians in addition to those here at the Health Center. More than half of them graduated from the University of Iowa College of Medicine and/or had residency training in University Hospitals. More than 2,000 of those Iowa physicians are specialty board certified.

Most of the time when they refer a patient to University Hospitals, they want help. Eighty percent of the patients are referred here at the choice of the doctor, or the patients themselves. They could go elsewhere.

It is important in the practice of medicine to know your professional colleagues. In your residency, you will have referrals from hundreds of physicians and will refer patients

"It is important in the practice of medicine to know your professional colleagues."

back to a similar number. Obviously, you cannot establish a personal relationship with all of them all at once, but each patient provides an opportunity for making at least one physician contact.

Learn the names of the referring physicians and refer to them by name when talking with their patients.

Call them if you need additional clinical information not available from the patient or the referring note.

In talking with patients about their immediate past treatment prior to admission, ask what the physician did and not why. Be aware of the fact that disease changes with time, and your findings may be quite different from those of the referring physician who last saw the patient hours, days or even weeks before the patient arrived here.

After the patient is admitted, keep the referring physician informed. If major changes have taken place in the patient's condition, unusual procedures and operations are scheduled or the patient is transferred to another service, call the patient's physician and tell him or her about it. Often the patient's relatives are at home and turn to their physician for status reports from the University Hospitals.

Finally, when the patient is discharged, get word to the referring physician as soon as possible.

Before a comprehensive summary is completed, send the physician:

- A handwritten note listing drugs prescribed, or
- A short handwritten letter stating findings and diagnosis, or
- Make a phone call, or
- Do all three.

When we adopted the "Guiding Principles of Intraprofessional Conduct at University Hospitals and Clinics" in 1976, we said we would carry out evaluative surveys. These have been done. In general there has been overall approval of the service rendered by the hospital and medical staff. There are, however, some negative comments.

Our physicians are still perceived by some community physicians as:

- Belittling them in front of their patients
- Indifferent about keeping them informed when their patient's condition changes while they are here or are transferred to other services

- Lax in sending timely discharge letters

Another issue relates to some of the new alternate health care systems (PPOs, HMOs, and IPAs) with whom we have consultative arrangements.

Physicians in prepaid care plans are at financial risk when they refer patients outside their plan for specialized care not provided by physicians in the plan.

When they refer a patient here it is usually for a specific reason often limited to one body system.

They complain that we are inclined to over-investigate and over-consult with our colleagues about the problem.

Whether this complaint is valid or not in any case I cannot say. It certainly is not the rule.

However, the remedy for the problem is COMMUNICATION — call the referring physician and explain why you feel you need to go beyond answering the referring physician's question.

Physicians sometimes complain that their patients are referred back to other doctors in the community. This should never happen! If a local referral within the patient's community is medically indicated, call the referring doctor and recommend that he or she initiate the referral and give your reason.

For instance, it may seem highly desirable to get a patient into one of our Shared Management programs such as the hemophiliac or the oncology programs. This would be a medically sound reason for requesting such a referral.

In conclusion, let me remind you we are a very large group. In order to effectively integrate our medical practice with that of the medical community of Iowa, we need the help of each of you to personalize your communications as you go about your daily patient care duties. It will help the quality of care provided your patients. It will help the image of our medical center — remember, one person's action (either good or bad) reflects on us all. Lastly, it will help prepare you to cope with the realities of interacting with other physicians in the treatment of patients when you enter practice. —PAUL M. SEEBOHM, M.D., *Iowa City, Iowa*

On the Other Hand . . .

Doctor-Doctor Communication: A Two-Way Street

When doctors refer their patients, they need to communicate clearly and promptly with those to whom the referrals are made, says one Iowan in a unique position to know.

MY COLLEAGUES AND I have proved it cuts both ways — if we want to hear from the specialists to whom we've referred our patients, we've got to tell them what we know about those patients and what we think they should look for.

Last fall we took a good look at our own procedures. We first checked to see if consultation results had returned to the charts of patients we had referred for consultation the previous

summer. When we found that only 76% of those charts contained any information returned about the consultation, we dug a little deeper to be sure our office had sent a specific consultation request to the specialist.

"When inter-physician communications are lacking, we put each other unnecessarily at risk for malpractice suits."

We were chagrined to discover that only 66% of the patients had a consult request, letter or chart material sent before they were seen by the specialist.

This problem is not unique to our office, according to specialty colleagues at the University and Mercy Hospitals.

All of us simply must do better with inter-physician communications to help reduce and eliminate such problems as unnecessary cost, duplication of procedures with the additional risk to the patient, ineffective continuity of care and inappropriate treatments that could have been prevented.

When inter-physician communications are lacking, we put each other unnecessarily at risk for malpractice suits.

The American Academy of Family Physicians Consultation Request Form is one of the most useful tools available and can be enthusiastically recommended for use with every patient sent for consultation or referral. This 3-part carbonless, single-page form can be most helpful to the patient's own doctor and the physician to whom the patient is being referred.

Besides providing pertinent history, exam and lab findings, the AAFP form tells the consultant what you want done. It brings the consultant's report back to you, while its second and third copies provide the record for the consultant's report and your own record that information was sent to the consultant.

Simple though it sounds, this one-page form can create a lot of positive happenings for the referring physician/patient/specialist team simply by helping them communicate clearly and on a timely basis. And isn't that really the name of the game? — CHARLES E. DRISCOLL, M.D., *Iowa City, Iowa*

Gallstone Lithotripsy: A Promising New Therapy

ROBERT W. SUMMERS, M.D.

JAMES W. MAHER, M.D.

Iowa City, Iowa

Physicians at the University of Iowa Hospitals and Clinics are exploring new therapeutic approaches to treating gallstones. The authors discuss successful treatment of gallbladder and common duct stones using lithotripsy and other technologies.

SURGICAL REMOVAL OF THE GALLBLADDER is the accepted form of therapy for symptomatic gallstones. The procedure is effective in permanently relieving the problem in over 95% of patients and the overall mortality is less than 1%.

In the 60's and 70's, our understanding of the pathophysiology of gallstone disease advanced greatly when the physical chemistry of cholesterol solubility was elucidated. These studies eventually led to therapeutic trials of bile salts such as chenodeoxycholic (CDCA) and ursodeoxycholic (UDCA) acid to dissolve cholesterol stones. Bile salts were effective and safe, but achieved stone dissolution in such

low percentages that this approach never achieved widespread acceptance.

New and exciting therapeutic approaches to gallstone disease are being explored. Extracorporeal lithotripsy was first applied to the treatment of kidney stones and has now become the treatment of choice. Shock waves are generated by an electrode, focused by an elliptical reflector and directed through water and the body surface to the stone. The resultant "shock" fractures the stone.

The same technology has now been successfully applied to gallbladder and common duct stones. The new gallstone lithotripter has undergone several modifications: the water bath has been replaced by a water cushion and gallstone localization is accomplished by an inline ultrasound device rather than bi-plane radiography. General anesthesia is no longer necessary. The procedure can be performed with mild intravenous sedation and analgesia.

"In April of 1988, the new gallstone lithotripter will be installed in the Center for Digestive Diseases at University of Iowa Hospitals and Clinics and staffed as a multi-disciplinary unit by the Departments of Surgery and Internal Medicine."

Positioning of the patient is facilitated by a computerized stone localization system. Initial experience with the instrument in Germany has been very encouraging in managing over 300 patients with gallstones.

The authors practice in the Center for Digestive Diseases, Depts. of Internal Medicine and Surgery, University of Iowa Hospitals and Clinics, Iowa City.



The physician, using a light pen, pinpoints the location of the gallstone on the computer for patient positioning. The computer then automatically positions the stone into focus.

Another new approach to treating gallstones is being planned at the University of Iowa. A solvent, methyl tert-butyl ether will be repeatedly injected into and withdrawn from the gallbladder resulting in stone dissolution. This procedure, although more invasive, may be an important complementary option, especially for multiple stones.

At the University of Iowa, successful treatment of common duct stones refractory to removal by endoscopic sphincterotomy has already been performed in 10 patients using the kidney lithotripter. In April of 1988, the new gallstone lithotripter will be installed in the Center for Digestive Diseases at University of Iowa Hospitals and Clinics and staffed as a

multi-disciplinary unit by the Departments of Surgery and Internal Medicine. This instrument will be one of 10 such units in the United States to be tested under an FDA-approved protocol. Such testing is required to assure safety and efficacy before similar units can be marketed for more widespread use. (The inclusion and exclusion criteria for the study are included in Table 1.)

Potential advantages of the procedure are many. The cost of the procedure should be less than cholecystectomy. The morbidity is likely to be less than with a surgical procedure and the patient will not have an incision or a scar. The patient should be pain free and ready to resume daily activities in a day or 2. About 30% of patients experience at least one episode of biliary colic following treatment but all are symptomatic beforehand. One hundred percent of patients with solitary stones have been stone free at 6 months. The incidence of recurrent stones is unknown but oral bile salts may well play an important therapeutic role

(Please turn to page 166)

TABLE 1
GALLSTONE STUDY CRITERIA

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> • Symptomatic cholelithiasis • 1 to 3 radiolucent stones, each < 30 mm diameter • Functioning gallbladder (OCG) • Patient informed consent 	<ul style="list-style-type: none"> • Pregnancy or pacemaker • Allergy to contrast medium or coagulopathy • Cysts or aneurysms in the shock wave path • Common duct stone, pancreatitis, cholangitis • Anesthesia risk IV or V



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in these patients. Furthermore, repeat lithotripsy can easily be done.

Clearly there are many important questions which must be answered about the procedure. It will almost certainly be more pleasant for the patient but will it be cost effective compared with surgical therapy? It appears to be safe but the full dimensions of the safety factor are not known and the overall effectiveness is not established. In due course the applications will be broadened to treat a larger percentage of patients with gallstones but the final treatable percentage is unknown. Some patients may best be treated with one modality, others with another. Finally, the problem of recurrent stones must be addressed.

However, it looks as if a new era is dawning in the treatment of gallstones, a malady that affects about 15 million Americans. It is likely that several approaches will be useful in gallstone management including extracorporeal lithotripsy, MTBE dissolution and traditional cholecystectomy. The University of Iowa Center for Digestive Diseases hopes to play an important role in evaluating these new modes of treatment.

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John W. Eckstein, M.D.

Questions and Answers



Private \$ Bol\$ter Medical Education at UI

John W. Eckstein, M.D., Dean, University of Iowa College of Medicine, emphasizes the role of private giving in maintaining the margins of excellence that keep Iowa at the forefront of medical education and research.

Since it's a major unit of a state university, isn't the UI College of Medicine primarily supported from state-appropriated funds?

Legislative appropriations provide only 11% of the College of Medicine budget. Student tuition, high though it seems, provides 4.4%. We get another 6.4% from recovering indirect costs incurred in conducting research and training projects. Everything else comes from 2 sources: the Medical Service Plan (patient fee income) which accounts for 38% of the budget; and gifts, grants and contracts which provide the remaining 40.2%.

Should the state of Iowa take more financial responsibility for educating doctors at its only public medical college?

Yes. We have tried to make that point repeatedly, especially in recent years when the appropriations increment of our budget has

declined a percentage point here, a fraction of a point there. Both the Regents and the legislature have listened and they've earmarked funding just for the College of Medicine in the last couple of years. But it hasn't enabled us to reverse the trend.

So that's why the College is so receptive to contributions?

Yes, and this is a big factor in our pursuit of research grants and contracts. We need those dollars if we're to meet our obligations to teach undergraduates and residents, maintain the community-based Family Practice Residency Program and provide continuing medical education.

What sort of gifts does the College of Medicine receive?

Alumni class gifts provided about \$50,000 for medical student aid last year. The family of a former faculty member underwrote a visiting professorship to rotate among neurology, psychiatry and neurosurgery. Civic and fraternal groups support a variety of research — the Lions underwrite programs in ophthalmology and otolaryngology, Kiwanis supports Alzheimer's disease research by our neurologists, the Eagles support heart and kidney studies. We're recruiting now for the Block Professorship endowed by the Iowa family of one of our graduates to add a top-flight cancer researcher to the faculty.

How can Iowa practitioners be helpful in this effort?

(Please turn to page 170)

QUESTIONS AND ANSWERS

(Continued from page 169)

Iowa practitioners are very helpful already, but there's always room for more on this bandwagon. Each year we write to ask all Iowa doctors, most of whom are alumni, for support for the College of Medicine Development Fund. They've pumped a million dollars into our programs over the past 5 years. Many physicians remember the College in their wills and frequently remind grateful patients what a fine thing it is to help educate tomorrow's doctors. Alumni have been especially generous in funding professorships or research honoring beloved teachers such as I.V. Ponseti, Fred Blodi, Maurice Van Allen, Hans Ehrenhaft, Sidney Ziffren, Rubin Flocks and Bill Keetel.

Words alone can't thank the people who provide such gifts. Their thanks must come from the knowledge they're truly making a difference in the quality of what we can do for our students.



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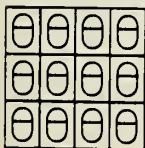


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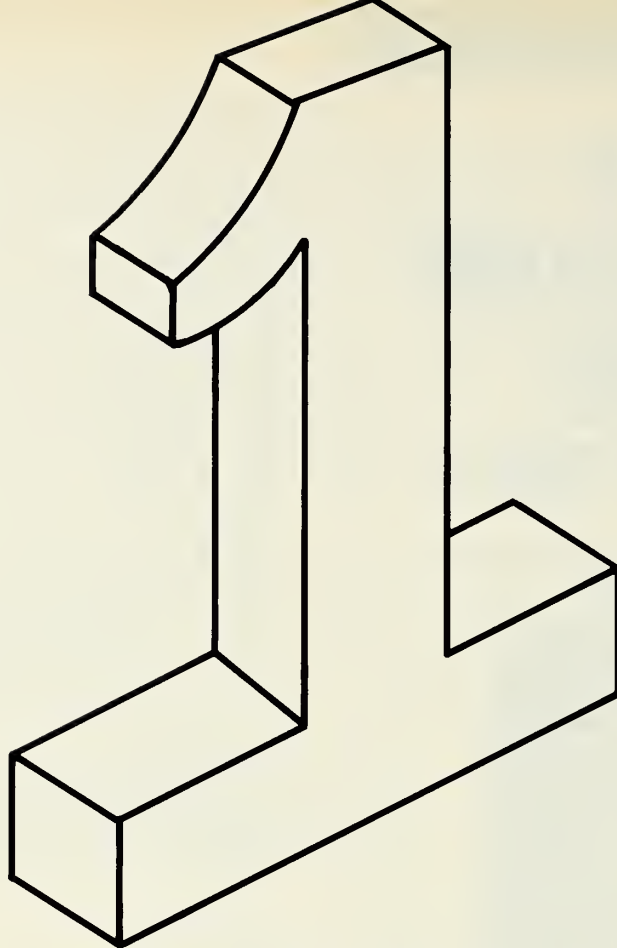
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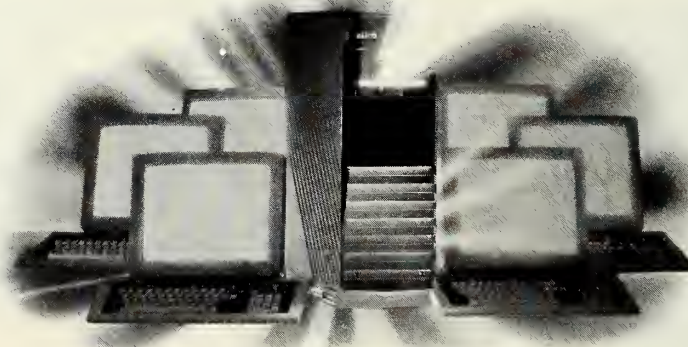
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Uncommon Presentation of a Common Infection: Mycoplasmal Pneumonia

GINA ADEL, M.D.

CHARLES HELMS, M.D., Ph.D.

Iowa City, Iowa

Mycoplasmal pneumonia is a common cause of pneumonia in Iowa. The authors describe an unusual case of mycoplasmal pneumonia, illustrating the disease may be severe and vary significantly from classically described presentations.

MYCOPLASMA PNEUMONIAE IS A COMMON cause of infection of the upper and lower respiratory tracts.¹ In closed populations such as college students and military recruits, *M. pneumoniae* has accounted for over 50% of the pneumonias seen. In the general population, the frequency of *M. pneumoniae* pneumonias is closer to 15%. In a serological study of atypical pneumonias seen in Iowa be-

The authors are internists from the Department of Internal Medicine, University of Iowa College of Medicine.

tween 1975 and 1981, the frequency of *M. pneumoniae* infection was 14.1%.²

The incidence and frequency of *M. pneumoniae* pneumonia is highest in school-age children and young adults.¹ Data from Iowa cited earlier indicate that 20% of pneumonias in this age group are associated with *M. pneumoniae* infection.²

Clearly, *M. pneumoniae* is a common cause of pneumonia nationwide and in Iowa. Given its frequency, physicians should be aware of its multiple clinical manifestations to speed diagnosis and institution of appropriate antibiotic therapy.

The following case history is an example of an unusual presentation of *M. pneumoniae* pneumonia. It is intended to show the disease may be severe and may vary significantly from its classically described presentation.

Case Presentation

A 28-year-old mother of 3 from southern Iowa was transferred to University of Iowa Hospitals and Clinics (UIHC) in July, 1978 because of pneumonia. Four days earlier she had been hospitalized locally following 3 days of fever and chills and one day of dry cough, nausea and vomiting. Her temperature upon admission was 39°C. The WBC count was normal with 50% band forms. The chest x-ray showed a right middle lobe infiltrate (Figure

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF APRIL 1988

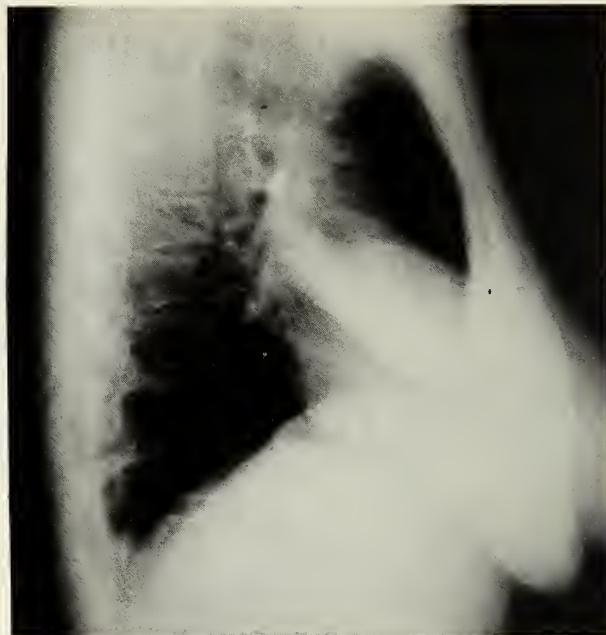
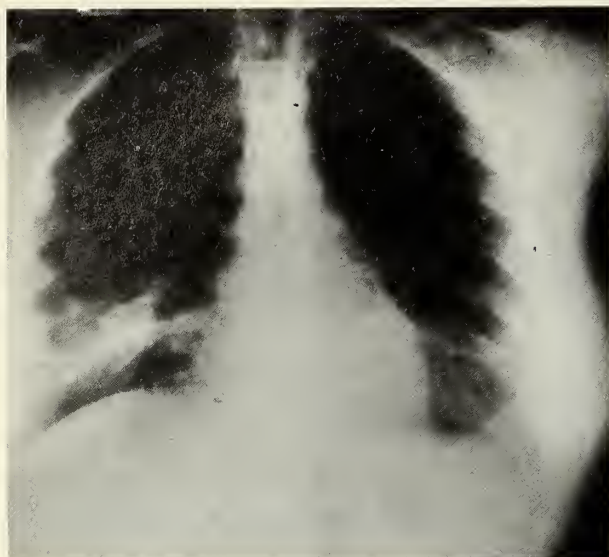


Figure 1. PA and lateral chest x-rays of the patient on admission showing a right middle lobe infiltrate.

1). Room air arterial blood gas determinations were pO₂ 55 TORR, pCO₂ 28 TORR and pH 7.56. She was given ampicillin 500 mg IV q 4 hr. Subsequently, gentamicin 80 mg IV q 8 hr was added. Compazine was used to control nausea and vomiting.

The patient did not improve. Her cough became productive and fever persisted. The antibiotic regimen was changed to erythromycin 500 mg IV q 6 hr and penicillin G 1 million units IV q 2 hr and the patient was transferred to UIHC.

Additional history obtained upon transfer indicated the patient lived with a 9-year-old brother and 45-year-old mother who were recovering from protracted bouts of low grade fever and cough. Her 3 children were healthy. There were no pets. Her temperature was 39°C, pulse 90/min, respiration 30/min and blood pressure 120/60 mmHg. The patient's affect was flat and distinctly abnormal according to her relatives. She stared at the ceiling during the exam and responded slowly, but was alert and oriented. Rales were heard over the right middle lobe. Nystagmus, tremors and ataxia were felt secondary to cerebellar dysfunction by a neurological consultant and not due to the compazine given at the local hospital.

The hematocrit was 30%, hemoglobin 9.7 gm/dl with hypochromic and microcytic red

cell indices. The WBC, differential and platelet counts were normal. The albumin was 2.7 g/dl, LDH 2520 IU/l, total bilirubin 1.8 mg/dl, GOT 546 IU/l, and CPK 351 IU/l. Cerebrospinal fluid (CSF) analysis was unremarkable. The chest x-ray revealed right middle lobe consolidation with an accompanying pleural effusion. The effusion fluid was exudative in character with 13,800 WBC (97% mononuclear cells) and a glucose of 65 mg/dl.

The patient was treated with penicillin G 1 million U IV q 2 hr for 4 days. In addition, she received erythromycin, 1.5 gm IV daily for 6 days and then 500 mg PO QID for 2 more weeks. Fever and neurological findings resolved by the fourth hospital day and she recovered uneventfully.

Bacterial cultures of blood, urine, sputum, CSF and pleural fluid were sterile. Cultures of respiratory secretions failed to grow chlamydia or viruses. Cold agglutinins were IgM class and were reactive with I antigen. Complement-fixing antibodies to the lipid antigen of *M. pneumoniae* rose from <1:8 acutely to >1:1024 in convalescence. Antibody titers to a battery of other respiratory pathogens, including *L. pneumophila*, *C. psittaci* and *C. burnetii*, were unchanged. The brother's and mother's convalescent antibody titers to *M. pneumoniae* were 1:128 and 1:32, respectively.

Case Discussion

This is a well-documented case of cold agglutinin positive primary atypical pneumonia. The patient appeared to have acquired the disease from her brother or mother following household exposure. Such intrafamilial spread of *M. pneumoniae* infection is characteristic.¹

This case differs from the classic clinical presentation of *M. pneumoniae* pneumonia in several aspects. First, the patient's illness was quite acute in onset rather than the more typical subacute presentation. The case was also unusual because the patient required hospitalization. Most cases of *M. pneumoniae* pneumonia can be treated on an outpatient basis. Cough, the hallmark of *M. pneumoniae* pneumonia, was less prominent in this case. The most striking variations from the typical presentation, however, were the abnormal liver function tests, bizarre changes of affect and cerebellar findings. These findings suggested extrapulmonary involvement. The hypochromic microcytic anemia seen in this young menstruating woman likely predated the acute illness. The degree to which a component of hemolysis secondary to the presence of cold hemagglutinins compounded the underlying iron deficiency anemia is unclear.

Acute Presentation

While *M. pneumoniae* infection of the lower respiratory tract classically presents as an indolent or "walking" pneumonia, there is increasing evidence in the literature that the infection may present acutely and severely.^{3, 4, 5} Illness of increased severity has been described in various populations of hospitalized patients. Linz *et al* described an unusual series of *M. pneumoniae* pneumonias which required hospitalization at a university hospital.⁵ The frequencies of non-pneumonitic and extrapulmonary complications were each remarkably high at about 40%. Extrapulmonary manifestations of *M. pneumoniae* pneumonia have been reviewed recently and include hemolytic anemia and other hematologic abnormalities, rashes of varying severity, neurological abnormalities, nephritis, hepatitis, pancreatitis, arthritis and myopericarditis.¹

Given the unusual prominence of neurological manifestations in this case, a comment on neurological findings in mycoplasmal pneumonia is in order. At least 130 patients

with neurological manifestations of *M. pneumoniae* infection have been reviewed by Cassell and Cole.⁶ Although respiratory symptoms were absent in 21% of cases reviewed, the great majority were associated with respiratory illness. Specific neurological abnormalities reported included meningitis, meningoencephalitis, ascending paralysis, transverse myelitis, peripheral neuropathy, psychosis and cerebellar ataxia. Recovery is slow from these complications and mortality

"'Autoantibodies' capable of interacting with brain and other human tissues occur in the majority of patients with *M. pneumoniae* pneumonia"

may be as high as 10.3%. Approximately one-third of patients with neurological complications of *M. pneumoniae* infection have permanent residua.

Several mechanisms have been postulated to account for the neurologic manifestations of *M. pneumoniae* infection.^{1, 6} "Autoantibodies" capable of interacting with brain and other human tissues occur in the majority of patients with *M. pneumoniae* pneumonia. Given the frequency of these antibodies and the infrequency of neurological complications, the etiologic relationship of the antibodies to neurological complications is not yet clear.

Other postulated mechanisms of neurological damage include toxin production, direct microthrombi formation and nonspecific cell-mediated immunity. There is little or no direct evidence to suggest these mechanisms are playing a role in *M. pneumoniae* CNS disease. The most compelling mechanism proposed is that of direct nervous system invasion by *M. pneumoniae*. *M. pneumoniae* has been isolated from the cerebrospinal fluid of patients with mycoplasmal pneumonia with primary neurological complications and from patients with primary neurological disease thought due to the organism.⁷

Diagnostic Technology

Diagnosis in this case was clearly retrospective and could not have been made without the use of serological techniques. DNA

(Please turn to page 176)

probe technology is now available for the acute diagnosis of *M. pneumoniae* infections (Gen-Probe, San Diego, California). Using an isotopically labeled DNA probe which is complementary to the ribosomal RNA of *M. pneumoniae*, it is possible to quickly and accurately diagnose *M. pneumoniae* disease. A drawback to DNA probe technology is that a facility must be equipped to handle isotopes. This requirement may limit application of the technique in smaller hospitals.

Antibiotic therapy in this case was initially empiric. The likely pathogens of pneumonia in a young adult include *M. pneumoniae*, various viruses and *Streptococcus pneumoniae*. Erythromycin is a reasonable choice under these circumstances for reasons discussed earlier in the Journal.⁸ Tetracycline is also acceptable therapy in patients over 8 years old, when pregnancy can be excluded and when pneumococcal disease is unlikely.

The efficacy of antibiotics in treatment of mycoplasmal pneumonia has been well established in placebo-controlled field trials in closed populations.⁹ Both erythromycin and tetracycline derivatives have been shown to be effective in reducing days of fever, hospitalization and radiographic infiltrate. The efficacy of antibiotics in treating extrarespiratory manifestations of *M. pneumoniae* infection has not been proven.

In conclusion, the case history presented in this report is atypical of classic *M. pneumoniae* pneumonia. Atypical cases appear to be more prevalent among hospitalized patients. The frequency of extrarespiratory complications of *M. pneumoniae* infection also seems increased in hospitalized patients. Physicians should be aware of these unusual manifestations of the disease.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

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Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

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Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

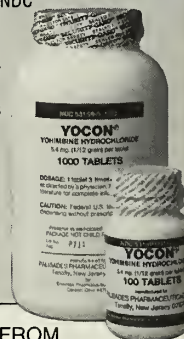
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

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The Editor Comments



Continuing the Tradition

A LONG AND WARM RELATIONSHIP exists between *IOWA MEDICINE* and the University of Iowa College of Medicine. That relationship has been enhanced each April by the dedication of that issue of *IOWA MEDICINE* to the College. We are pleased to continue that tradition.

This week I received the "1988 Desk Reference Guide for Communicating with the University of Iowa Hospitals and Clinics." Iowa physicians can learn much about the hospitals and clinics by studying this guide. There are 16 major departments of medical discipline and subspecialties of the departments are numerous. For example, in the Department of Internal Medicine there are 13 subdivisions, in Pediatrics 16, Radiology 14 and Dentistry 9.

The medical staff is large and of high caliber. There are 478 staff physicians and dentists, 459 resident physicians and dentists and 148 fellow physicians. I also noted that 2,305 persons are in training in health education, of whom 504 are in medical training.

The University Hospitals and Clinics are busy. The hospital consists of 902 beds (198 set aside for intensive care). There are 157 ambulatory patient specialty clinics — 382,211 patients visited those clinics last year. The hospital had 34,480 patient admissions.

At first glance, these figures may appear to be boring statistics, but they are significant. At the onset of the various governmental insurance programs (Medicare, Medicaid), there was fear public hospitals and physicians would be needed less because local hospitals would

absorb many of the patients. That fear has not been realized because the programs and services of the University still beckon to Iowans. Furthermore, there have been more and more cooperative ventures between the public and private sector. Recently, a program of cooperative effort in organ transplant surgery has become reality between 2 Des Moines hospitals and the University Hospitals.

There is better rapport between the University faculty and staff and Iowa physicians. In some areas communication is excellent. Other areas need improvement. Of course, this is a 2-way proposition. Too often the practicing physician may not provide the consulting faculty with facts that might be germane to the patient's problems. As in many areas of patient care, that important word "communication" looms clearly before us. So often communication is the weak link of a relationship. We of *IOWA MEDICINE* desire to avoid a weak link by our continuing close communion with the College of Medicine.

We acknowledge the fine manuscripts written by the physicians of the College of Medicine. Unfortunately we cannot publish all that come to us. Yet, the acceptance rate is satisfactory. Communication with Gordon Strayer and Dean Borg and their staff has been of great help to the editors of *IOWA MEDICINE*. Doctor Richard Caplan's monthly message and astute input as a member of the publications committee represent another close communication between the Journal and the College. The tradition continues and this issue of *IOWA MEDICINE* is dedicated to the University of Iowa College of Medicine. — M.E.A.



**MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS**

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Helping Patients Stop Smoking

We at the Alton Ochsner Medical Foundation are very interested in tobacco's harmful effects on health. This interest goes back 50 years when the suspected link between cigarette smoking and lung cancer was first reported by Alton Ochsner, M.D. and his student/protege Michael DeBakey, M.D. in 1939.

As a profession, we have come a long way since then. With tens of thousands of research papers and much clinical experience behind us, we all know the salient fact: Cigarette smoking is the most significant preventable health problem among Americans.

The fascinating fact is that physicians, as a group, have acted on this knowledge. Most physicians who smoked have stopped. Few physicians now smoke, compared to 26.7% of the general population.

The question I believe we need to address is why we have not yet been very successful in helping patients do what we have done for ourselves — stop the use of tobacco. Maybe we haven't tried hard enough yet.

Recent research, which perhaps has not been adequately called to physicians' attention, suggests our passivity on the stop smoking problem is as out of date as doctors recommending cigarettes to calm patients' nerves. There is a growing body of literature showing that physicians can assist a statistically significant number of patients to stop smoking, and they can do so in an economically practical fashion. — *Edward D. Frohlich, M.D., Alton Ochsner Medical Foundation, New Orleans, Louisiana.*

"Foreign" Doctors

It was with great pleasure that I read the little piece by Dr. Daniel F. Crowley on "Foreign Doctors" (January 1988 *IOWA MEDICINE*). It was a refreshing breath of air in today's climate when "foreign" doctors are frequently scapegoated for many of the ailments of current medicine. I would like to salute Dr. Crowley for his leadership in bringing reason and fairness to a rather emotional issue. — *John V. Fernandez, M.D., Council Bluffs, Iowa.*

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Recent Books

Driscoll, Charles E. and Robert E. Rakel, 1988, *Patient Care Procedures for Your Practice*, Medical Economics Books, Oradell, New Jersey. \$25.95. This is an excellent "how to" book which should serve as an excellent reference to the family physician. The presentations are concise, adequate and well-illustrated. Adequate reference citations are given for the reader to seek further information. The content of this manual originally appeared in the journal "Patient Care."

Bodansky, David, Maurice A. Robkin and David R. Stadler, editors, 1987, *Indoor Radon and Its Hazards*, University of Washington Press, Seattle, Washington. Cloth, \$20.00; paperback, \$9.95. The increasing interest in the radon problem makes this overview of the subject a valuable one. The subject is covered from basic terminology to concerns of the relationship of indoor radon to the incidence of

lung cancer. This is a good source of information for the physician as well as environmentalists.

Leitman, Mark W., 1987, *Manual for Eye Examination and Diagnosis*, third edition, Medical Economics Books, Oradell, New Jersey. Paperback, \$18.95. This manual, small (81 pages) and concise, provides brief descriptions of various diagnostic measures used in eye examinations. The student and house officer would find this a valuable guide.

Williams, Guy, 1987, *The Age of Miracles: Medicine and Surgery in the Nineteenth Century*. Academy Chicago Publishers, Chicago, Illinois. \$16.95. This is a delightful small volume of brief vignettes of numerous subjects depicting medical care in the 19th century. The subjects range from anesthesia, antisepsis, birth and infancy, hospital care and alternative medicine. Rather than a treatise on the history of medicine, this is a small book which can provide a few moments reading, laid aside and another chapter read at another time.

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Practice Management

Travel and Entertainment: Restrictions Continue

TAX LAW CONTINUES TO outline special deductibility requirements for some business expenses because they may be incurred for personal rather than business purposes. Expenses incurred for travel, entertainment, business gifts and listed property expenses must satisfy the rules regardless of whether the taxpayer derives enjoyment from the activity. To be deductible, these costs must be

ordinary and necessary business expenses. The chart at the right highlights some record-keeping requirements.

Specific details and other restrictions in this area are beyond the scope of this article. If you wish further information we will be glad to answer your questions or provide you with a copy of our travel and entertainment booklet. (Contact Jan Spina, McGladrey Hendrickson & Pullen, 640 Capital Square, Des Moines, Iowa 50309, 515/284-8660.)

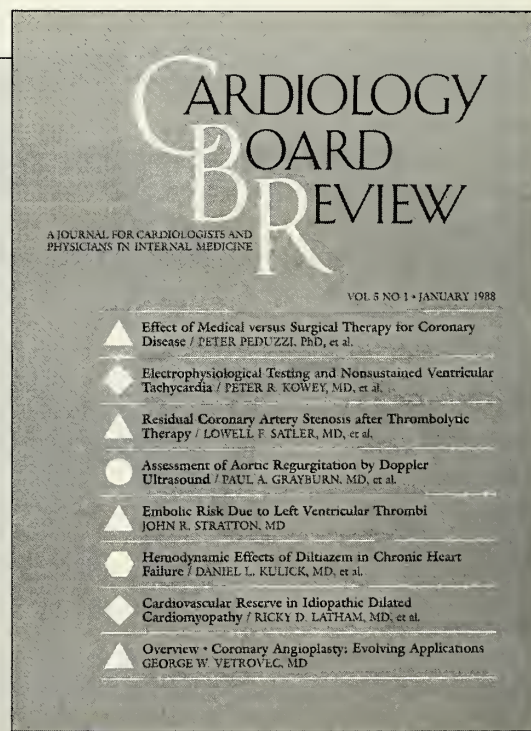
Material for this column is furnished by McGladrey, Hendrickson and Pullen, Des Moines.

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CARDIOLOGY BOARD REVIEW

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*Journals reviewed include: *Circulation*, *American Heart Journal*, *Journal of the American College of Cardiology*, *British Heart Journal*, *Chest*, *The American Journal of Cardiology*, *The New England Journal of Medicine*, *Annals of Internal Medicine*, *American Journal of Medicine*, and *The Journal of the American Medical Association*.

FACTORS TO BE PROVED IN SUBSTANTIATING ELEMENTS IN COLUMN 1

<i>Elements to be Substantiated (1)</i>	<i>For Expenditures for Travel Away From Home (2)</i>	<i>For Expenditures For Entertainment (3)</i>	<i>For Expenditures For Gifts (4)</i>	<i>Listed Property Expense* (5)</i>
Amount	Amount of each separate expenditure for transportation, lodging and meals. Permissible to total incidental expenses in reasonable categories, such as gasoline and oil, taxis, daily meals for traveler, etc.	Amount of each separate expenditure. Incidental items such as taxis, telephones, etc. may be totaled on a daily basis.	Cost of gift	Amount of business use, such as mileage, hours, etc.
Time	Dates of departure and return for each trip, and number of days attributable to business activities.	Date of entertainment or use of a facility for entertainment. (Duration of business discussion.)	Date of gift	Date of use for business purposes.
Place	Destination by name of city or other appropriate designation.	Name and address or similar designation or place of use of a facility in connection with entertainment. Type of entertainment if not otherwise apparent. (Place of business discussion.)	Not applicable.	Destination and place of business use.
Description	Not applicable	Not applicable	Description of gift	Not applicable
Business Purpose ...	Business reason for travel or nature of business benefit derived or expected to be derived.	Business reason or nature of business derived or expected to be derived. Nature of business discussion or activity if entertainment is other than "business meals."	Business reason for making the gift or nature of business benefit derived or expected to be derived.	Nature of business purpose of usage.
Business Relationship	Not applicable	Occupations or such other information — such as names or other designations — about persons entertained which established their business relationship to taxpayer. (Identification of persons entertained who participated in business discussion.)	Occupation or other information — such as name or other designation — about recipient which establishes business relationship to taxpayer.	Not applicable

* Listed property includes passenger auto, recreational property, computers and other transportation property such as airplanes.

Project USA

Positions are now available through Project USA, an AMA program to recruit fully licensed physicians for short-term, general medicine assignments at Indian Health Services and National Health Service Corps hospitals and clinics.

The vacancies are from 2 to 4 weeks in a variety of interesting locations. Participating physicians receive a stipend of \$750 a week plus round trip transportation and living accommodations. Interested physicians are urged to contact John Naughton, program director, American Medical Association, 535 N. Dearborn, Chicago, Illinois 60610 or call (312) 645-4702.

U. of I. College of Medicine

CHILDREN WITH HIGH BLOOD PRESSURE, cholesterol, or triglyceride levels and those who are overweight are much more likely as adults to have an increased risk of coronary disease than are children with middle or low levels. These are the results of the latest College of Medicine Muscatine Coronary Risk Factor Project 5-year adult follow-up study. The research shows the risk of coronary disease in adulthood can potentially be reduced by identifying high-risk individuals during childhood, says **Ronald Lauer**, Internal Medicine and director of the ongoing study. By treating children with high cholesterol, fat or blood pressure levels, it may be possible to reduce their risk of heart disease as adults, he says. The adult study participants were tested as children. Their levels were remeasured throughout their school years as part of the long-term coronary disease study.

ASSOCIATE DEAN CAROL ASCHENBRENER will oversee a national survey of health policies and practices for medical students as chairperson for the National Committee on Student Affairs for the Association of American Medical Colleges (AAMC) Group on Student Affairs. She will also be responsible for presenting programs in student affairs at the annual AAMC meeting in November.

A NEW CENTER DEDICATED TO THE STUDY OF SCHIZOPHRENIA at the College of Medicine has been funded with a federal grant of \$3.6 million. The National Institute of Mental Health is funding the new UI Mental Health Clinical Research Center, the largest of its type in the United States. Researchers at the center will investigate the biological causes of schizophrenia and seek to improve life for those afflicted with the illness. Director of the new Center is **Nancy Andreasen**, Psychiatry. The multidisciplinary Center will be comprised of 7 research areas: genetics unit, brain imaging unit, epidemiology unit, basic neurobiology unit, diagnosis and phenomenology unit and neuroendocrinology unit.

THE MAJOR CONTRIBUTOR TO THE DEVELOPMENT of a highly successful new anti-hypertensive, "Vasotec," and a Pharmacology graduate, has chosen the UI pharmacology department as the recipient of a \$50,000 grant. **Charles S. Sweet**, a senior scientist at the Merck Sharp & Dohme Research Laboratories Division in West Point, Pa., received the Directors' Scientific Award of the Merck Board of Directors. The award is to be made to the institution of the winner's choice.

AT-A-GLANCE . . . Mary E. Wilson, Internal Medicine, is the recipient of a 1987 Young Investigator Matching Grant from the Burroughs Wellcome Fund and The National Foundation for Infectious Diseases. She will study the effect on humans of leishmaniasis, a parasitic disease caused by the bite of the sandfly . . . **Gordon B. Ginder**, Internal Medicine, has won federal grants totaling more than \$1 million for blood disease studies which have implications for sickle cell anemia and currently incurable cancers . . . Inherited and age-related eye diseases is the focus of a College of Medicine ophthalmology department study funded by a \$35,000 grant from the Research to Prevent Blindness . . . How spinal cord neurons respond to stimulation of the skin will be the focus of a five-year study by **Carl G. Kukulka**, Physical Therapy. The \$249,000 study is funded by the National Institute of Neurological and Communicative Disorders and Stroke.

A PANIC DISORDER STUDY AT THE UI involves testing the effectiveness of fluvoxamine, an anti-depressant drug approved for use in Europe but still under investigation in the United States. The study will compare several treatments for panic disorder. One group will receive the drug, another group will receive cognitive-behavioral psychotherapy and a third group will be given a placebo.

This report has been compiled by The University of Iowa Health News Service.

February 1988 Morbidity Report

Disease	Feb. 1988 Total	1988 to Date	1987 to Date	Most Feb. Cases Reported From These Counties	Disease	Feb. 1988 Total	1988 to Date	1987 to Date	Most Feb. Cases Reported From These Counties
AIDS	2	4	4	NA	Legionellosis	2	4	5	Johnson
Amebiasis	0	2	3		Malaria	0	0	0	
Brucellosis	1	1	2	Black Hawk	Meningitis aseptic	4	7	3	Boone, Johnson, Linn, Webster
Chickenpox	1032	2029	2117	Scattered	bacterial meningococcal	7	25	11	Scattered
Campylobacter	14	26	24	Scattered	Mumps	11	19	39	Scattered
Cytomegalovirus	0	1	4		Pertussis	4	7	2	Mitchell, Union, Scott
Eatons Agent Infection	6	13	17	Scattered	Rabies in animals	12	23	30	Scattered
Encephalitis, viral	1	4	0	Polk	Reye Syndrome	0	0	0	
Erythema Infectiosum	7	7	114	Scattered	Rheumatic Fever	0	0	0	
Gastroenteritis (GIV)	2904	5297	4996	Scattered	Rubella (German measles)	0	0	0	
Giardiasis	28	54	43	Scattered	Measles	0	0	0	
Hepatitis, A	8	13	23	Scattered	Salmonellosis	2	6	19	Iowa, Poweshiek
Hepatitis, B	9	18	23	Scattered	Shigellosis	7	27	7	Scattered
Hepatitis, Non A-B	2	4	6	Harrison, Woodbury	Toxic Shock Syndrome	1	2	2	Iowa
Hepatitis type unspecified	1	1	1	Black Hawk	Tuberculosis total ill	3	6	6	Dubuque, Fayette
Herpes Simplex	84	165	171	Scattered	bact. pos.	0	2	6	
Herpes Zoster	0	0	0		Typhoid Fever	0	0	0	
Histoplasmosis	2	3	3	Black Hawk, Ringgold	Venereal diseases				
Infectious mononucleosis	20	24	25	Scattered	Gonorrhea	144	332	554	Scattered
Influenza, lab confirmed	40	55	55	Scattered	Chlamydia	384	675	582	Scattered
Influenza-like illness (URI)	7643	12875	11313	Scattered	Syphilis	1	2	4	Story

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Medical News/Products and Programs

NOW ON COMPUTER — The text for the 80 USP Patient Education Leaflets currently available in preprinted form is now accessible for computer use. The USP Leaflet Diskette contains all programming and leaflet text on a single 5¼ inch, 360K floppy disk. It is a stand-alone program which will run on an IBM, PC, XT, AT or compatible computer with 256K of memory and 360K floppy disk drive. The 80 titles cover over 2000 products. Further information about cost and availability may be obtained by calling The United States Pharmacopeial Convention, Inc., Order Processing Department, 1-800-227-USPC.

ORAL ELECTROLYTE REHYDRATION SOLUTION RENAMED — Pedialyte RS® Oral Electrolyte Rehydration Solution has been renamed. It is now called Rehydralyte™ Oral Electrolyte Rehydration Solution. Rehydralyte Oral Electrolyte Rehydration Solution is for infants and children who are mildly to moderately dehydrated from acute diarrhea. Rehydralyte is a safe and effective alternative to intravenous therapy in mild to moderate dehydration in most patients. Rehydralyte is ready to use and is available in convenient 8-oz glass nursing bottles.

Pedialyte Oral Electrolyte Maintenance Solution will continue to be known by its current name.

DRUG WARNING — Roche Laboratories has issued the following drug warning: Intravenous VERSED® has been associated with respiratory depression and respiratory arrest, especially when used for conscious sedation. In some cases, where this was not recognized promptly and treated effectively, death or hypoxic encephalopathy has resulted. Intravenous VERSED® should be used only in hos-

pital or ambulatory care settings, including physicians' offices, that provide for continuous monitoring of respiratory and cardiac function. Immediate availability of resuscitative drugs and equipment and personnel trained in their use should be assured.

The initial intravenous dose for conscious sedation may be as little as 1 mg., but should not exceed 2.5 mg. in a normal, healthy adult. Lower doses are necessary for older (over 60 years) or debilitated patients and in patients receiving concomitant narcotics or other CNS depressants. The initial dose and all subsequent doses should never be given as a bolus; administer over at least 2 minutes and allow an additional 2 or more minutes to fully evaluate the sedative effect. The use of the 1 mg./mL formulation or dilution of the 1 mg./mL or 5 mg./mL formulation is recommended to facilitate slower injection. See DOSAGE AND ADMINISTRATION for complete dosing information.

NEW ANTI-INFECTIVE — Miles Inc. has received FDA authorization to market CIPRO® (ciprofloxacin HCl/Miles), an oral quinolone antimicrobial effective against a wide range of gram-negative and gram-positive organisms. Clinical studies indicate oral CIPRO® is often as powerful as injectable antibiotics. It has been proven safe and effective for treatment of infections frequently encountered by physicians in office and hospital practice, including lower respiratory tract, urinary tract, skin and skin structure and bone and joint infections, as well as infectious diarrhea. Of 2799 patients who received 2868 courses of CIPRO® during clinical investigation, treatment was discontinued because of an adverse experience in only 3.5% of courses. The most frequently reported experiences — drug related or not — were nausea (5.2%), diarrhea (2.3%), vomiting (2.0%),

(Please turn to page 190)

MEDICAL NEWS/PRODUCTS AND PROGRAMS

(Continued from page 189)

abdominal pain/discomfort (1.7%), headache (1.2%), restlessness (1.1%) and rash (1.1%).

HEART ATTACK TREATMENT — The FDA has formally approved the intravenous use of streptokinase to reduce mortality in patients with acute myocardial infarction. Marketed under the name Streptase® by Hoechst-Roussel Pharmaceuticals Inc., this product has been used in the U.S. since 1977. Intravenous administration of Streptase® will enable treatment of heart attack victims to begin at least an hour sooner, resulting in critical time savings in the clot-dissolving and lifesaving process. The most common adverse reactions have included bleeding, allergic reactions, loss of normal blood pressure and erratic heart rhythms.

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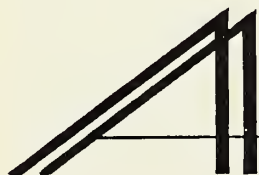
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About Iowa Physicians

Dr. Robert M. Collison, Oskaloosa, has retired after 40 years of medical practice. Dr. Collison received the M.D. degree at St. Louis University School of Medicine. He began medical practice in Oskaloosa in 1947. **Dr. Thomas Bergstrom** has joined the staff at the Powell III Chemical Dependency Center at Iowa Methodist Medical Center. Dr. Bergstrom received the M.D. degree at the U. of I. College of Medicine and previously practiced medicine in Earlham. **Dr. Ron Pick** has joined the staff of the Mercy-Sandhouse Medical Clinic in Madrid. Dr. Pick received the D.O. degree from the University of Osteopathic Medicine and Health Sciences and completed his residency

at Iowa Lutheran Hospital. **Dr. Drew Sieben** and **Dr. Stephen Piercy**, Fort Dodge, have merged their urology practices. Dr. Sieben has practiced in Fort Dodge for 10 years and Dr. Piercy has practiced for 2½ years. **Dr. Charles W. Laudenbach** has joined the staff at McFarland Clinic in Ames. Dr. Laudenbach received the M.D. degree from the University of Minnesota Medical School in Minneapolis. **Dr. Jean S. LePoidevin**, Waterloo, has retired after 37 years as a pediatrician. Dr. LePoidevin received the M.D. degree from the University of Wisconsin Medical School in Madison. **Dr. Kenneth Schultheis**, medical director of Mercy Hospital Medical Center emergency depart-

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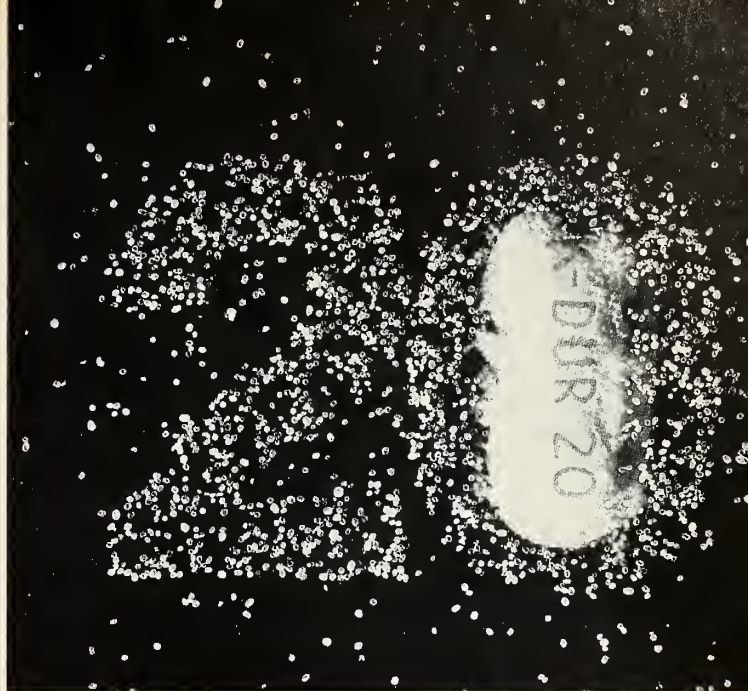
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ment, Des Moines, has been named president of the medical staff at Mercy. **Dr. James Blessman**, a family practice physician and medical director of the Mercy Pain Center, was elected secretary and treasurer.

Dr. V. Michael Miller has established a general surgical practice at Dallas County Hospital in Perry. Dr. Miller received the M.D. degree at the U. of I. College of Medicine. Prior to locating in the Perry area, Dr. Miller did surgical work at Veterans Administration Hospitals in Togus, Maine and Wichita, Kansas. **Drs. Ronald Zoutendam** and **Dennis Murphy** have merged their individual medical practices to form Sheldon Family Practice Associates. Dr. Zoutendam has practiced in Sheldon for 28 years and Dr. Murphy has practiced for 9 years. **Dr. John Hubiak** has retired after more than 30 years of family practice at the Odebolt Clinic. **Dr. Tony Moussalli** has replaced Dr. Hubiak. Dr. Moussalli received the M.D. degree from the French Faculty of Medicine in Beirut, Lebanon and took part in residencies in Middlesex, England, New York and New Jersey. He formerly practiced medicine in Miami, Florida. **Dr. Greg Weisshaar** has joined Cogley Medical Associates in Council Bluffs. Dr. Weisshaar received the M.D. degree from the U. of I. College of Medicine and completed his residency at Cheyenne, Wyoming. He previously practiced at the Sheboygan Clinic. **Dr. James Shehan**, Red Oak, has accepted a position as the director of university medical services at St. Joseph's Hospital, Omaha, Nebraska. Dr. Shehan received the M.D. degree from Creighton University School of Medicine, Omaha and has practiced medicine in Montgomery County for 16 years.

Dr. David J. Nichols has joined **Dr. Jay Heitsman** at Ottumwa Pediatrics. Dr. Nichols received the D.O. degree from the University of Osteopathic Medicine and Health Sciences, Des Moines and completed his residency at The Children's Mercy Hospital, Kansas City, Missouri. **Drs. Debra Miller** and **Ronda Dennis-Smithart** have opened Pediatric Associates of Ottumwa. Dr. Miller and Dr. Dennis-Smithart both received the M.D. degree from the

(Please turn to page 194)



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1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: **Hyperkalemia**—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium-Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS**, **WARNINGS**, and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3. Correction of acidosis, if present, with intravenous sodium bicarbonate.

4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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U. of I. College of Medicine and served their residencies at University Hospitals in Iowa City. Dr. Terry Klemek has joined Dr. Steve Sumey in the Armstrong Medical Clinic. Dr. Klemek received the M.D. degree at the University of Minnesota Medical School, Minneapolis and completed his family practice residency in Duluth, Minnesota. Prior to joining the Clinic, Dr. Klemek was in private practice in Parkers Prairie, Minnesota. Dr. Brent Gunsolly has joined Medical Associates in Sac City. Dr. Gunsolly received the M.D. degree at the U. of I. College of Medicine and formerly practiced medicine in Marshalltown. Dr. Clinton E. Berryhill has begun his new practice in Williamsburg after 30 years of medical practice in Readlyn. Dr. Richard Jaskiewicz has taken a position as an emergency room physician in Huntington, Indiana after practicing for 4 years at the Gilfillan Clinic in Bloomfield.

Dr. Dennis Mallory, Toledo, has been nominated by the Iowa Department of Public Health to receive the Governor's Volunteer Award for outstanding volunteer service. Dr. James M. Brooke has joined the Independent Medical Surgical Group in Mason City. Dr. Brooke received the M.D. degree from the University of Washington School of Medicine, Seattle and completed his residency at the Veterans Administration Medical Center and Mercy Hospital Medical Center, Des Moines. Prior to locating in Mason City, Dr. Brooke was a staff surgeon at the Veterans Administration Hospital in Cheyenne, Wyoming. Dr. Mahbubul Islam and Dr. Craig A. Strobel have opened offices in the Davenport Medical Plaza Building. Dr. Islam received the M.D. degree from Dacca Medical College, Bangladesh and completed his internship and residency at Church Home Hospital and Sinai Hospital, Hartford, Connecticut. He previously practiced in Louisa, Kentucky. Dr. Strobel received the D.O. degree at Kirksville College of Osteopathic Medicine in Kirksville, Missouri. He completed his internship at Wilford Hall Medical Center, San Antonio, Texas and has worked in Quad-City area clinics for the past 3 years. Dr. Bohdan K. Wasiljew, Mason City, became a member of the Society of American Gastrointestinal Endoscopic Surgeons (SAGES). Dr. Wasiljew is only the fourth surgeon in Iowa to receive the SAGES certificate.

Deaths

Dr. Alice J. Collins, 71, Des Moines, died February 3 at Iowa Lutheran Hospital, Des Moines. Dr. Collins was a retired anesthesiologist with Des Moines Anesthesiologists P.C. She received the M.D. degree at the U. of I. College of Medicine.

Dr. David H. Watkins, 70, Des Moines, died February 2 at Iowa Methodist Medical Center, Des Moines. Dr. Watkins retired in 1984 after serving as director of medical education at both Iowa Methodist and Broadlawns medical centers. He was considered a pioneer in the field of acute and subacute devices for assisted circulation. He received the M.D. degree from the University of Colorado School of Medicine in Denver and completed residencies at University of Iowa and Mayo Clinic.

Dr. John R. Doran, 65, Ames, died February 15 at his home. Dr. Doran had practiced med-

icine since the late 1940's and established the Doran Clinic for Women in 1978. He was a member of the American Colleges of Surgeons, Obstetricians and Gynecologists. He received the M.D. degree from the U. of I. College of Medicine.

Dr. Walter A. Anneberg, 89, Carroll, died February 15 at St. Anthony's Regional Hospital, Carroll. Dr. Anneberg had practiced medicine since 1924. He was a life member of the Iowa Medical Society and in 1979 received the distinguished alumni service award from the University of Iowa. He received the M.D. degree from the U. of I. College of Medicine.

Dr. Andrew T. Engelmann, 70, Sioux City, died February 17 at a local hospital. Dr. Engelmann had retired in December 1987 after 40 years as a family practice physician. He received the M.D. degree from the U. of I. College of Medicine and completed his internship at St. Francis Hospital in LaCrosse, Wisconsin.

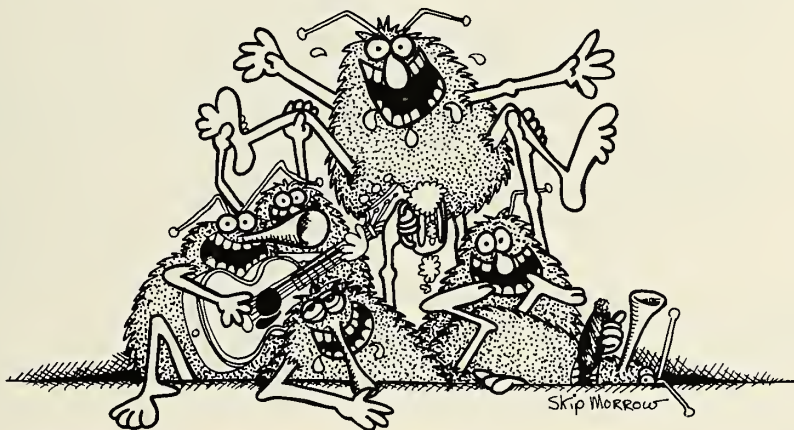


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In the Public Interest

Preceptors Key Figures in Medical Education

NEARLY 120 IOWA PHYSICIANS in 82 communities from Clarion to Hamburg to Clinton to Sioux City are providing opportunities for tomorrow's doctors to learn about patient care in "real-world" settings, away from the sometimes rarified atmosphere of a university teaching hospital.

Physicians in private practice actually constitute an important segment of the College of Medicine teaching faculty, providing community orientation to medical care through the required junior course, *Preceptorship in Family Practice*.

The 116 Iowa physicians currently serving as preceptors have agreed to provide students with learning sessions that address clinical problems, diagnostic and treatment techniques in an office setting and "provide an opportunity for the student to learn the role and lifestyle of a physician in the community."

To Iowa physicians who believe they don't have anything special to teach and don't know how to teach, Charles Driscoll, M.D., head of the Department of Family Practice in the University of Iowa College of Medicine and director of the preceptorship program, says "We have a feeling that all of you are great teachers, but you just don't see that when you look in the mirror."

A physician who approaches teaching with enthusiasm, answers questions carefully, corrects the student without belittling and does all this in a nonthreatening environment, adds Dr. Driscoll, is a physician from whom the student will learn a great deal.

Preceptors provide opportunities for students to accompany them on house calls, nursing home visits, hospital rounds and emergency room calls and to participate in recreational and community activities. Stu-

dents can also be involved with nurse and technician duties and do initial work-ups and assessments. Much is learned about diagnostic and treatment techniques in the office setting and about the dynamics of community life.

"Experience shows we're achieving our long-range goals for the preceptorships — providing more primary care physicians by acquainting all medical students with the practice of family practice/primary care medicine and reducing the number of health manpower shortage areas here in Iowa," Dr. Driscoll concludes.

Regrettably, space precludes listing all those who combine efforts and talents to carry out this important teaching effort — physicians and their families, College of Medicine on-campus faculty and administrators, the students and Iowa patients who bring students face-to-face with a variety of health needs. Together, they accomplish a truly great educational effort in the public interest.

April 1988

Iowa Medicine

President's Privilege



Parting Advice

DO WE TAKE OURSELVES too seriously? Do we fight too hard, struggle too fiercely? Do we worry too much about money?

Let's not be fooled into thinking the amount of money we make is a measure of our net worth, that the good we do is only measured in dollars and cents. Our relationship with our patients is the most important thing we have — let's not let anyone spoil this for us.

Computer programs have been developed that translate our value into dollars. Computers produce definable, measurable, reproducible results but they can't calculate the feelings and emotions that are most important in medical care — trust, confidence, concern and caring.

We must learn to accept problems as a part of life, do the best we can to solve them and move on. Life, after all, is a movable feast. Taking yourself too seriously can make you forget to say 'please', 'thank you', 'I'm sorry' or 'I love you'.

I've learned a lot this past year as IMS president. I've learned that the IMS is respected in this state and among the states. This speaks well for those who have gone before me in office. I thank them for their dedication and integrity. I thank you for letting me be part of this Society and I say welcome and

good luck to incoming president Dan Youngblade.

One last piece of advice to close my last 'President's Privilege'. Take time to enjoy life. Eat more ice cream, laugh more, swim more rivers. And don't forget to laugh at yourself.

A handwritten signature in cursive script that reads "D J Walter M.D.".

Dennis J. Walter, M.D.
President

WORKSAFE IOWA: Good Health on the Job

The UI Institute of Agricultural Medicine and Occupational Health has launched a broad program of training, information resources and consultation services in occupational medicine. The program is called WORKSAFE IOWA.

WORK-RELATED MEDICAL PROBLEMS may be as minor as eyestrain from an improperly adjusted VDT (video display terminal) or as serious as pulmonary edema in a farmer who has inhaled dangerous levels of toxic gases. In Iowa, they occur in the office, the field, the hog confinement building, the workshop or on the production line. But almost all work-related medical problems at some time or another end up in a physician's office.

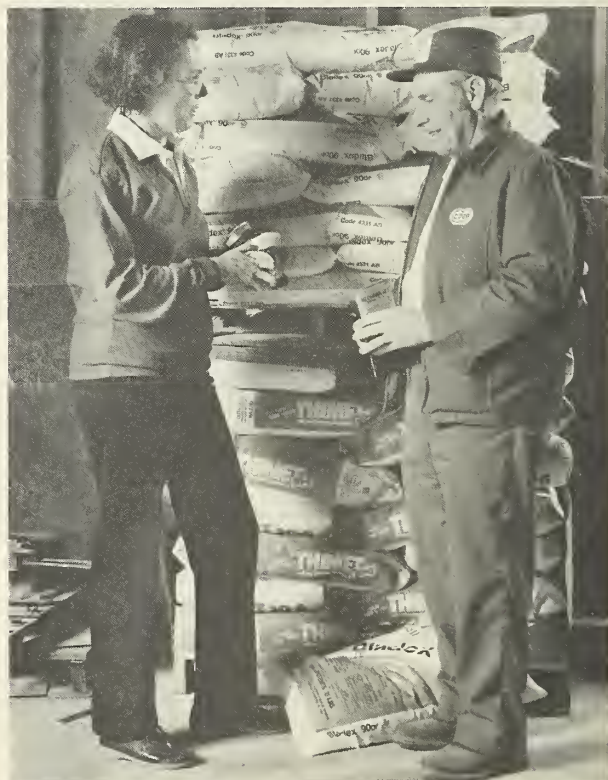
"Until a few years ago, there were only 5 occupational physicians in Iowa — that is, physicians who only practice occupational medicine," says James Merchant, M.D., of the University of Iowa.

The need for education, training and consultation in occupational medicine goes far beyond what those 5 can provide, continues Merchant, director of the UI Institute of Agricultural Medicine and Occupational Health (IAMOH).

The disparity between existing occupational health services and the need for them in Iowa led Merchant and others at IAMOH to approach the W. K. Kellogg Foundation 2 years ago with a proposal for a comprehensive occupational disease prevention and health promotion program. Kellogg, which provided

funding to build IAMOH in 1972, responded with \$1.2 million for a program that could serve as a model for other parts of the country and to provide initial support for a program that might eventually be self-sustaining.

The program, operating under the monicker "WORKSAFE IOWA," has several components that interweave to some extent. They



ON-SITE CONSULTING — Jane Gay, occupational health nurse for WORKSAFE IOWA, explains use of a respirator to a Co-op Feeds plant manager in Iowa City. Photo by Jon Van Allen.

include instruction and training for senior medical students, occupational medicine and internal medicine residents, physical therapists and nurses. WORKSAFE IOWA also provides continuing education programs, an information network and resource center and occupational health consultation services in medicine and industrial hygiene for plant managers, unions, physicians, clinics, hospitals and HMOs.

Continuing Education

Continuing medical education in this area for physicians is already underway, says Linda Leverenz, WORKSAFE IOWA's coordinator for health education. The program will host a 2-day conference in Iowa City October 21-22 on workers' compensation and assessment of the impaired worker. Leverenz says the program plans to offer 2 or 3 continuing education courses a year in occupational health for physicians and other health professionals.

"We hope one day to secure or develop audio-visual materials — videotapes, for example — so physicians could check them out from our resource center and earn CME credit at home," Leverenz says.

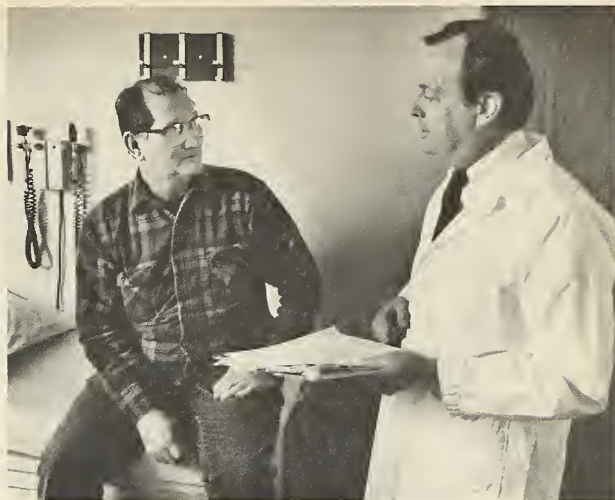
Merchant emphasizes that WORKSAFE IOWA is designed to serve Iowa physicians and others in a variety of ways ranging from the ad-hoc phone consultation to a full slate of consultation services for a clinic or hospital.

WORKSAFE Serves Physicians

"Our consultation services are services to physicians, not directly to patients," Merchant says. "It is not our intention to circumvent health care providers but to provide them services so they can do a better job."

Merchant directs UI Hospitals and Clinics' occupational medicine clinic in internal medicine. He notes referrals to that clinic or others at the UI that deal with spine, hand and forearm injuries are services Iowa physicians should know about.

Generally speaking, most businesses and industries in Iowa are represented by a local doctor or a family physician who has not had specialty training in occupational health. The companies retain these physicians as a matter of proximity and convenience. One of WORKSAFE IOWA's goals, Merchant explains, is to enable these physicians to serve their clients



HEALTHY ADVICE — James Merchant, M.D., professor and director of the University of Iowa Institute of Agricultural Medicine and Environmental Health, confers with a patient at UI Hospitals. Photo by Jon Van Allen.

with the best possible health care, with particular attention to occupational health concerns. WORKSAFE IOWA also offers industrial hygiene consultation services which may also be requested by physicians providing occupational medicine services.

"We are eager to build up the capabilities of physicians in this area and to develop affiliation agreements with some clinics and hospitals that can provide comprehensive occupational medicine services locally," Merchant says. "The incentive and interest in this area is rapidly developing and awareness of the need for it is growing."

Information Resources

As physicians' interest in this area grows, so will the need for information. WORKSAFE IOWA's Information Network (WIIN) and resource center exists to fill that need, says network coordinator Diane Pepetone. The network offers "memberships" at different levels for different levels of usage. Computerized literature searches are available, and the network offers access to databases on occupational health.

For physicians who have personal computers and modems, an electronic "bulletin board" listing the latest conferences and other information will be available. Specific occupational health questions can be left on the

(Please turn to page 214)

bulletin board for IAMOH staffers, who can reply on the board or call the questioner. Printed literature and audio-visual materials can also be obtained from information specialists at WIIN.

Cooperation is Key

Information, education, training and consultation services are all part of the integrated approach to occupational health through WORKSAFE IOWA. "The idea of cooperative education is central to our program," Merchant says. "Those clinics, hospitals, HMOs and other groups to whom we provide consultation services will be investing in the future by cooperatively helping to educate and train senior medical students and residents through practicums and rotations."

"This kind of cooperative education, this give-and-take between student and practicing professional, is central to the mission of WORKSAFE IOWA."

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BRIEF SUMMARY

CONTRAINDICATIONS

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PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

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Issued 1/87

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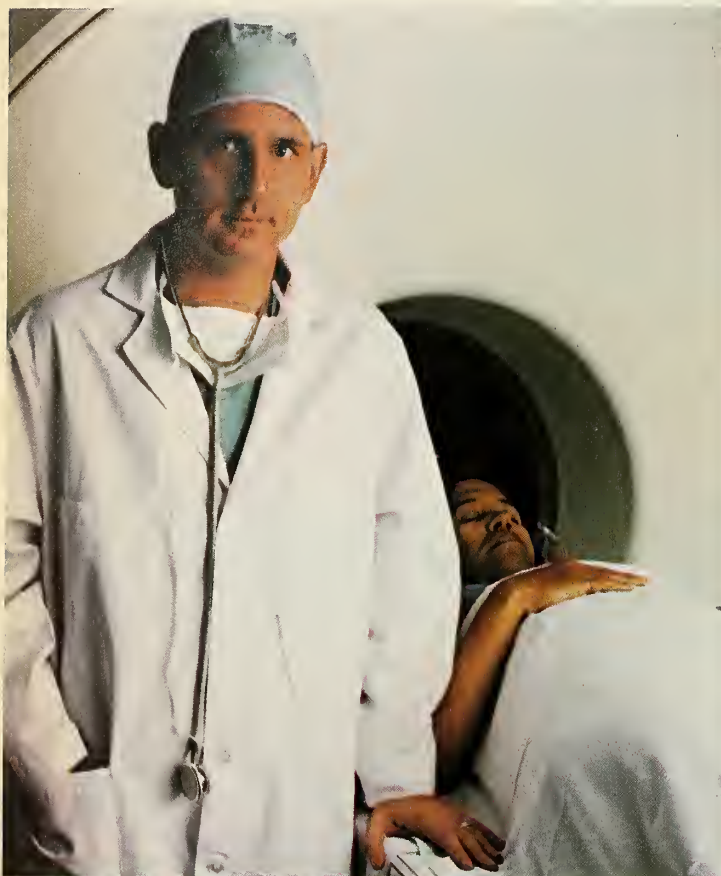
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Please see adjoining page for references and brief summary of prescribing information.

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ALLAN J. HAMILTON, M.D.

Neurosurgical Resident and Research Fellow,
Massachusetts General Hospital, Boston, Massachusetts.
Captain, U.S. Army Reserve.

EDUCATION Ithaca College, B.A. (Magna Cum Laude);
Hamilton College (Pre-med); Harvard Medical School.

RESIDENCY General Surgical Internship. Neurosurgical
Residency, Massachusetts General Hospital.

CONTINUING EDUCATION Neurology and Neuro-
surgery Research Fellowship Training, National Institutes
of Health.

OUTSTANDING ACHIEVEMENTS Olsen Memorial
Fellowship, National Masonic Medical Research Foundation;
Albert Schweitzer Fellowship, International Albert Schweitzer
Foundation; Harvard Medical School Cabot Prize for Best
Senior Thesis; recently published article, "Who Shall Live
and Who Shall Die" in Newsweek Magazine.

▼ The work I'm doing in the Army Reserve fits perfectly with my academic research interests in civilian life. The Army is very concerned with the effects of high-altitude cerebral edema, which is a mirror model of cerebral hypoxia, something I deal with every day in our neurosurgical intensive care unit. I couldn't ask for a smoother transition. And that's true for a lot of Reserve physicians. All we really do is change our clothes, not our mindset.

"Some of the projects the Army is undertaking are on the cutting edge of research. For example, I'm currently involved in developing for the Army a prototype of a non-invasive intracranial pressure-monitoring device that we hope will allow us to measure pressure changes as the brain swells—without drilling holes in the skull. If we can get our design to work, such a device could revolutionize high-altitude medicine as well as civilian neurosurgical care.

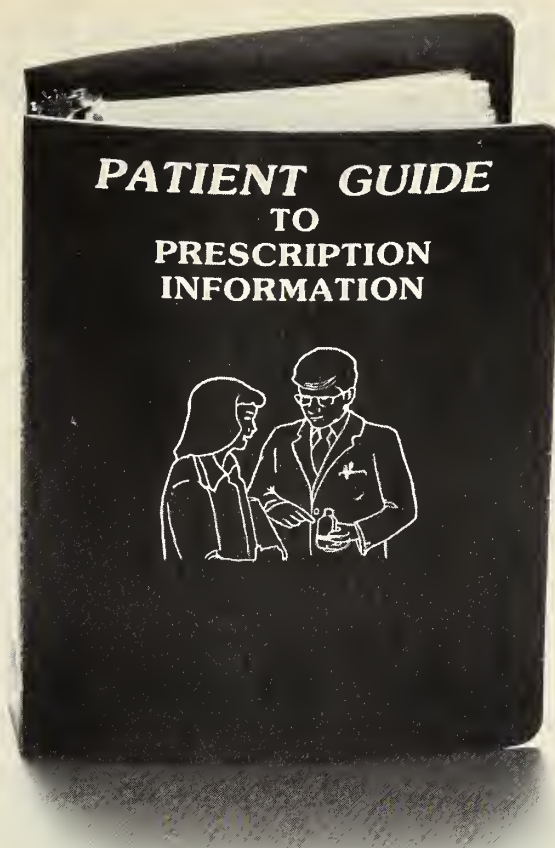
"The quality of medicine and the caliber of people I've been associated with in the Army Reserve are, without question, equal to civilian hospitals. In fact, I'm giving serious consideration to applying for an active duty academic position in Army Medicine when my residency ends at Massachusetts General. ▼

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Soldier being examined for effects of high-altitude cerebral edema.

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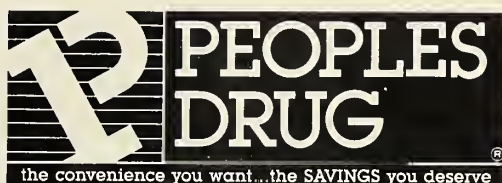
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Questions and Answers



Working for a Safe Environment

Environmental health and safety activities of the Iowa Department of Public Health are discussed. The author is chief of the DPH Bureau of Health Engineering and Consumer Safety.

What are the activities of the Iowa Department of Public Health (DPH) regarding environmental health and safety?

The department was created to address environmental health problems related to food, water and housing. The DPH conducts inspections of grade A milk, X-ray and radioactive materials, swimming pools (sanitation only) and state plumbing code engineering, PCB and asbestos, consumer product recall, burial preparations, mass gathering sites and institutions.

In addition, the department conducts health evaluations and consultations in the areas of disease reporting/surveillance, housing, water supplies, indoor air pollution, toxic substances in the workplace, radon in homes, child poisonings, risk reduction, disaster response (radioactive and natural), lead abatement, fluoridation and toxic substance exposure at hazardous waste sites.

There is a need to expand DPH activities — particularly in environmental epidemiology and toxic disease reporting and public awareness. Preliminary efforts are in place to investigate episodes of groundwater contamination, indoor air problems and occupation-related complaints.

What are some of the environmental health hazards facing all Iowans?

Major health hazards that need more attention include motor vehicle accidents, aquatic injury, indoor air contaminants, safety and toxic hazards in the work place, contamination of private water supplies, contamination of fresh water lakes and streams, groundwater contamination, lifestyle hazards and cancer and birth defects from low and high level exposures.

What special health hazards are faced by Iowa farmers?

Farmers face numerous hazards including traumatic injury, toxic chemical threats, indoor air pollution and respiratory problems. There have been epidemiologic studies that show increased cancer risk — especially leukemia — to farmers.

What legislation does the DPH support to make our environment safer?

The DPH needs specific new legislation and additional staff to provide better public awareness of health risks through improved

(Please turn to page 218)

QUESTIONS AND ANSWERS

(Continued from page 217)

disease surveillance, hazard evaluation and coordinated assistance programs to local health agencies.

The DPH supports increased funding for groundwater activities, legislation regarding swimming pool inspections, increasing lead abatement grants to city/county boards of health, nonionizing radiation monitoring and consultations and radon monitoring and consultations.

Additional legislation for groundwater protection, field inspections of well construction and boating safety to be implemented by other state agencies is also supported by the DPH.

How can Iowa physicians help efforts to reduce environmental hazards?

- Be aware of environmental hazards and prevention methods; read the *Iowa Disease Bulletin*.

- Always collect occupational and exposure histories (e.g. inhalation hazards, working conditions, family histories, water sources, lifestyle).

- Report to the DPH diseases, injuries or consumer product-related accidents that should be assessed. Consider reporting any unusual disease pattern. The DPH is committed to investigate and evaluate these problems and make recommendations for control.

- Always consider the possibility a patient may be pregnant before doing X-rays.

- Report acute poisoning to control centers. (Des Moines . . . 1-800-362-2327; Iowa City . . . 1-800-272-6477; Cedar Rapids . . . 1-800-332-5470; Sioux City . . . 1-800-352-2222.)

- Counsel patients to avoid unhealthy lifestyles.

- Become involved in developing city or county boards of health and support programs of city/county sanitarians and nurses.

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Malignant Melanoma: A Disease on the Increase

PAUL E. JOHNSON, M.D.

Sioux City, Iowa

LESTER R. DRAGSTEDT, II, M.D.

Des Moines, Iowa

The authors outline a study of 30 cases of malignant melanoma and evaluate changing concepts of treatment. Traumatic sun exposure as an etiologic agent is discussed.

MALIGNANT MELANOMA IS INCREASING in the U.S. at an alarming annual rate of 4-8%. There has also been an evolution in surgical treatment as we better understand the natural history of the disease.

This paper reviews 30 cases of melanoma at the Veterans Administration Medical Center in Des Moines, Iowa, from January 1972 to December 1985.

Study Results

All our patients were caucasian males. Nationally about 98% of malignant melanoma

cases are caucasian and 50% male.¹ Our median age group was 60-70 years compared to 40-50 years nationally. Body distribution was similar to national statistics with the trunk the predominant site in 40% followed by head/neck in 27%. Ten percent had unknown primaries.

At the time of presentation, 10% had lymph node metastases. Distant metastases were found in 7%. So far, 33% of the 30 patients have died from their melanoma. Four died of other causes, 15 are alive without recurrence and one is alive with recurrence.

Our pathologists utilized Clark's Level of classification to describe the extent of melanoma invasion (Table 1). Breslow thickness — a measurement of depth of invasion — is another classification system used by clinicians to predict prognosis.

In our series, no patients with Clark's Level I or II died or had recurrence. In those with Clark's Level III or greater, 61% have died or have recurrence. All patients with unknown primaries died. None of the 4 patients with choroid melanoma of the eye has had recurrence or has died from melanoma.

No patients under 50 years old presented with levels I or II. Most of these superficial lesions were Hutchinson's melanotic freckles (HMF), a lesion with a good prognosis. Their later onset in life reflects the current belief that HMF is a result of cumulative sun exposure unlike nodular melanoma (NM) or superficial spreading melanoma (SSM).²

Dr. Johnson practices general surgery in Sioux City. Dr. Dragstedt is a surgeon with the Veterans Administration Medical Center in Des Moines.

TABLE 1
SURVIVAL: 30 PATIENTS — DMVAMC

	5 Yr Survival	Average Time Between Diagnosis & Death
CLARK'S LEVEL		
I (epidermis)	100%	—
II (papillary dermis)	100%	—
III (papillary/reticular interface)	80%	45 months
IV (reticular dermis)	50%	28 months
V (beyond dermis)	0%	19 months
Unknown Primary	0%	7 months

TABLE 2
BORDERS OF RESECTION: 30 PATIENTS — DMVAMC

Border of Resection	No. of Patients	% Death or Recurrence
<1 cm	4	25%
1-3 cm	7	29%
3-5 cm	8	38%
>5 cm	3	33%
Enucleation	4	0
Unknown 1	3	100%
Unknown Borders	1	100%

Lymph node and brain metastases were the most common sites of metastases (4 patients each). Other sites were liver, lung and bone (2 patients each).

Survival Rates

Our 5-year survivals reflect poorer prognosis and decreased length of survival with increasing penetration of the skin by the tumor (Table 1).

We studied the surface size of the tumor with respect to death and recurrence and found no definite trend. There was some suggestion <1 cm surface size had the best prognosis while 1-2 cm tumors had the worst. Those >2 cm had an intermediate prognosis. This may be due to the fact that >2 cm tend to be SSM rather than NM, which have a poorer prognosis.

In analyzing borders of resection we found no correlation between border of resection and survival or recurrence (Table 2).

We found a sharp increase in annual incidence, from an average of .6 cases per year

between 1972 and 1978 to 3.1 cases per year from 1979-1985. The occupations of those with melanoma were predominately indoor jobs. However, in the first 7 years of the study farmers were predominant among those contracting melanoma by almost 2 to 1. In the last 7 years, the indoor occupational group was most common by the same ratio. This reflects a population shift from rural to urban and an increase in recreational sun exposure.

About 30% of patients felt their tumors had arisen from previous "moles." None of the patients had been exposed to atomic bomb radiation. Ten percent were found to have multiple dysplastic nevi on physical exam.

Discussion

Exposure to ultraviolet sunlight is the primary environmental agent implicated in development of melanoma. In the "initiator-promoter" theory of cancer inducement, it has been suggested that a benign nevus may play the role of "initiator," while UV light acts on the nevus as a "promoter" to cause malignant change. Florescent lights, estrogen and trauma (burns, etc.) have also been suggested as having a causal relationship to melanoma.²

Most data, including ours, now point to the belief that chronic sun exposure can lead to development of the HMF type of melanoma. Unfortunately, 90% of melanomas are SSM or the more virulent NM. These types are felt to be related to traumatic sun exposure.³

Recreational, intermittent or traumatic sun exposure — typified by sunburning, blistering and pain — helps explain the increased rate of melanoma in those with indoor jobs. It also explains the high rate of truncal involvement. However, continuous tanning is probably protective.

Surgical Treatment

Surgical treatment of melanoma has undergone a great deal of change. Ten years ago, most non-head and neck melanomas were removed with 5 cm borders. Today, most advocate borders of 3 cm or less. Perhaps the easiest system to remember is the "1-2-3 rule" by Fisher.⁴ He advocates 1 cm borders of resection if the Breslow level is <0.75 mm, 2 cm for 1.7-3.6 mm and 3 cm if >3.6 mm. Urist, et al feel any lesion deeper than 1 mm, ulcerative or in areas of higher risk such as the back, posterior-lateral arms, neck and scalp (i.e., the

so-called "BANS" areas) needs 3 cm borders.⁵ Most take the subcutaneous tissue but leave the fascia.

All agree lymph node dissections should be done for palpable lymph nodes. However, controversy remains concerning indications for prophylactic lymph node dissections (PLND). For example, studies by the World Health Organization, Elder and Lang, et al showed no survival benefit to PLND.^{6,7,8} Balch, et al continued to show some benefits in those with lesions .75 to 4 mm.⁹ Others also believe those which are ulcerative or in the "BANS" region need PLND. Our study was not large enough to support either view. We did 4 prophylactic node dissections. Two patients eventually died with melanoma, one having had positive nodes at time of dissection.

A review of admission physical exams on our 30 patients revealed a poorly documented skin exam in nearly every case. With the discovery of the dysplastic nevi syndrome, a good physical exam can identify those at increased risk for melanoma and allow treatment at an earlier stage.

In identifying the dysplastic nevus syndrome, remember these lesions are frequently multicolored with irregular borders, usually >6 mm in size, often >100 in number (average adult has 40 or less) and are most common on the back.¹⁰ This syndrome occurs in about 2-5% of the population and accounts for 5.5% of cases of melanoma.¹¹

Summary

Malignant melanoma is a dangerous cancer which is increasing in incidence. This disease is curable when detected early. None of our Clark's Level I or II patients died, while the more advanced stages are directly correlated with length of patient survival.

Surgical removal is the only effective cure, with the emphasis on more conservative borders of excision and eliminating prophylactic lymph node dissections.

References

References noted in this article are available either from the authors or the editors of *IOWA MEDICINE*.

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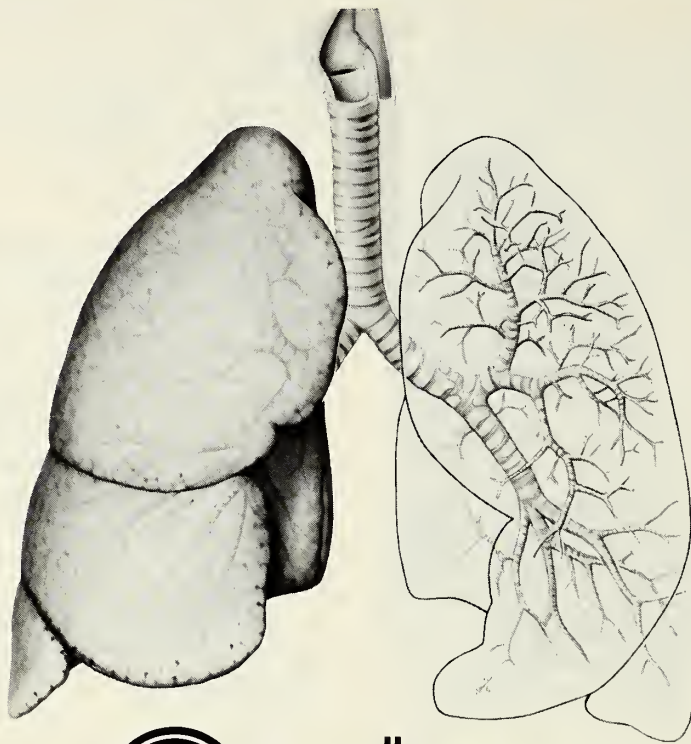
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- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever): 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nerv-

ousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.

- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis: elevations in BUN or serum creatinine.
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Marion E. Alberts, M.D.

The Editor Comments



Rural Health

COWS ARE DUMB. I came to that conclusion while herding the critters along a dusty road in the drought years of the 1930's. My task was to herd the cows along the road so they might feed on the weeds. There were few automobiles along a country road, but when one did come at least one cow wandered onto the road as though to challenge the driver. Another cow would try to get through a fence to reach the green corn which was not conducive to a cow's good health.

Dust was an ever present scourge. Dust clouds blotted out the sun's rays, casting a shadow darker than a total eclipse. Breathing great amounts of dust-laden air was a true health hazard. Many people wore cloth masks.

After the drought ended, irrigation became part of farming. But there still was dust. As plows, combines (earlier reapers and threshing machines) or corn pickers were driven back and forth across the fields, the farmer was subject to dust. Later mobile farm machines were equipped with air-conditioned cabs, but still the dust had to be reckoned with. It is still a problem.

Farm accidents have always been a problem. On the farm where I worked as a lad, the main source of power for drawing machines through the fields were horses. I was always admonished never to walk behind a horse; to always warn the horse by voice of one's presence. The horse gave way to the tractor and the one I remember most was a big green monster known as a Model B John Deere. Its great danger was the open fly-wheel that

whirled along the side of the engine mounting, luring an unsuspecting victim into its clutches. Older tractors were unstable with the narrowly spaced front wheels. The farmer feared the tractor tipping over and pinning him against the ground.

Have you ever been hit across the side of the head by a cow's tail — a tail laden with frozen manure? It hurts and can be dangerous. Milking was done by hand. Perched on a one-legged stool, the milker twice a day endured this hazard and that of being kicked or stepped upon by the cow. Oh, it had its good aspects too . . . the cow presented a warm body to lean against and the "udder" advantage was your hands kept warm during the process.

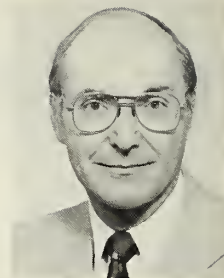
Those were some of the hazards of rural life 50 years ago. Now there are others, some a threat to the farmer and to the entire population. Farm accidents are still high on the list. Safety measures and prevention education are constant considerations. Chemicals are a serious hazard, to the farmer and the environment. Dust is still present, causing health hazards to the worker besides the danger of dust explosions.

The farmers of today are a sophisticated segment of society. Their knowledge of the hazards in their environment is widespread. They seek the answers to make their lives more wholesome and avoid endangering the environment.

Medical and agricultural science have done much research in these areas and continue to provide answers to potential problems. This issue of *IOWA MEDICINE* is dedicated to that endeavor, for truly the farmer and his productivity in a safe environment are a concern of all, medicine not excluded. — M.E.A.

Richard M. Caplan, M.D.

CME Notebook



A New Organ System

WHAT MIGHT YOU THINK of a physician who somehow emerged from our educational system with essentially no knowledge of one organ system, for example the gastrointestinal? Might that doctor's patients at times be puzzled, maybe even anxious? And would the doctor sometimes feel confused by ordinary medical literature and frustrated at how illnesses and outcomes were erratically or tragically bizarre or mysterious?

Unthinkable, you might say, for such an educational anomaly to occur. I agree. Yet, if such an omission did happen, an educational remedy could set the matter right. Again I agree, but the process might not be so simple as one might think because of the relationships each organ system has with others.

Consider the turmoil many practitioners now feel about their work — not the bioscience and its vocabulary, concepts, skills and hazards, but the vast changes in the socioeconomic side: vocabulary, paperwork, peer review, regulation, insurance problems, advertising, competition, computers, accountability and the threat of diminished authority and income. I'm not sure it will provide much comfort, but try thinking of these phenomena as an organ system, one that didn't really exist before. Now, for reasons we may or may not comprehend, this organ system has hypertrophied to an amazing and fearsome degree. You might prefer to think I've described a metastasizing malignancy, but humor me with my extended metaphor.

Among physicians who feel trapped, an-

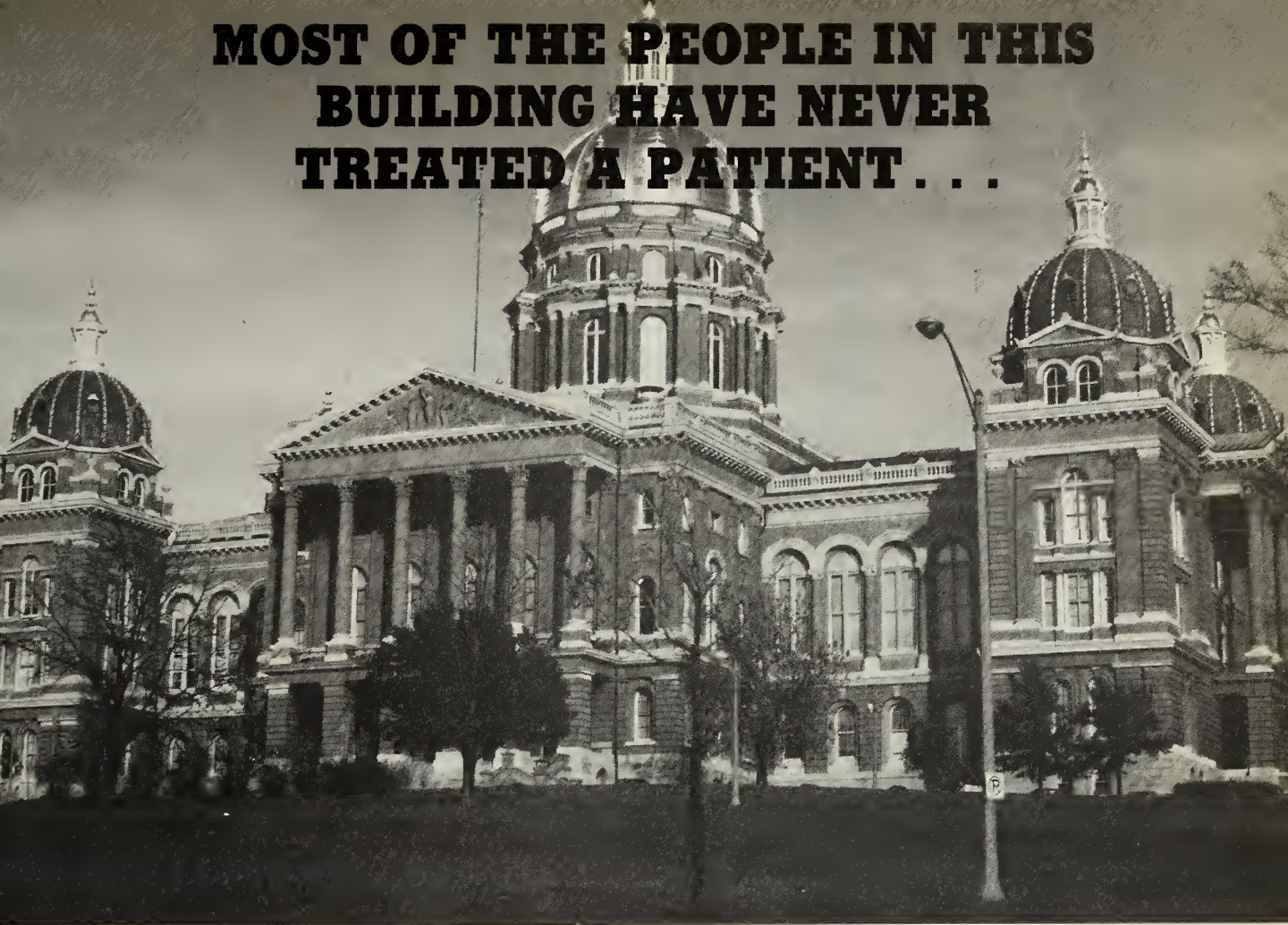
gry or resentful over this new 'sociocultural organ,' responses are predictable. One is denial ("It isn't there, or if it is, it will soon go away by itself"); another is to fight the enemy ("I'll be damned if I'll follow the rules. I'll complain to my congressman"); another is passive/aggressive behavior ("I'll make them keep hounding me. They might tire and leave me alone"); another is petulant revenge ("I'll counsel my children and others not to go into medicine"). These responses are non-constructive, futile, even counterproductive.

What I suggest is an educational response. Study the socioeconomic aspect of medicine as you would a new organ system. What is its structure (anatomy)? Its function (physiology)? What makes it go awry (pathology)? How does it manifest itself (diagnosis)? What influences or alters it (therapeutics)? If its presence or disorders won't go away, what adaptive behavior would be most fruitful (rehabilitation)? What would slow or quell its extension (preventive medicine)? If this is an organ system of the body politic rather than one of the body, the appropriate disciplines are epidemiology and social sciences such as politics, history, sociology and economics. Our curricula may gradually start to include them.

Emotional responses (anger, melancholy) and related behavioral responses (rage, early retirement) are typical of older physicians or less adaptable physicians of any age. Resilient physicians and most new physicians will learn how to deal with the new organ system productively. They will view its challenges as opportunities. They will learn to work within the frame of its undeniable existence. They may even learn how to make it beneficial for themselves and their patients. They will learn how, given what seems a lemon, to make lemonade.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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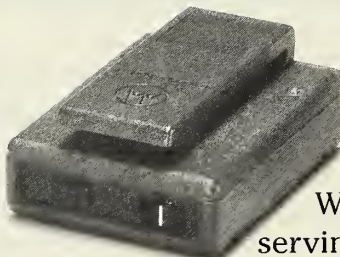
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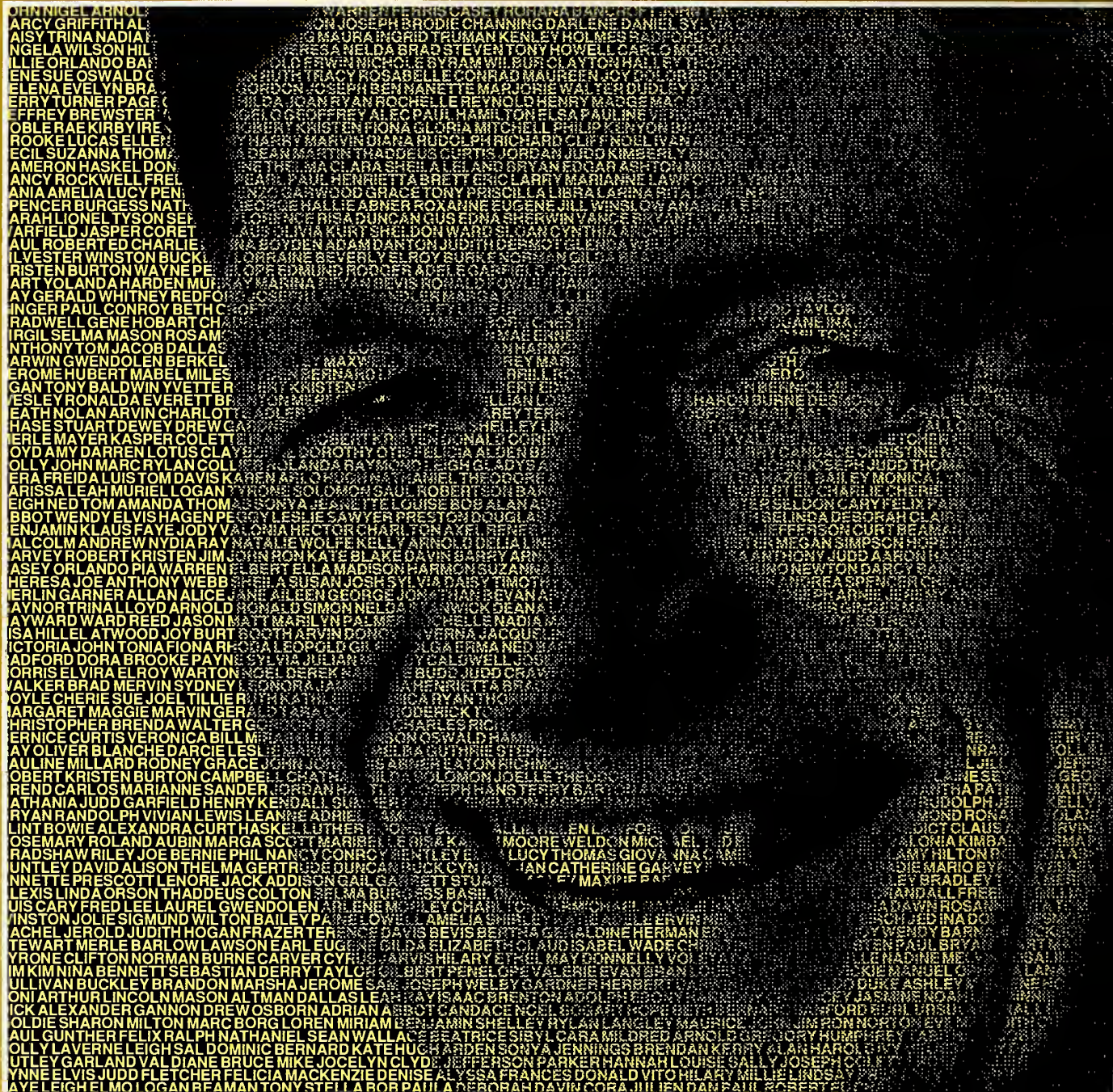
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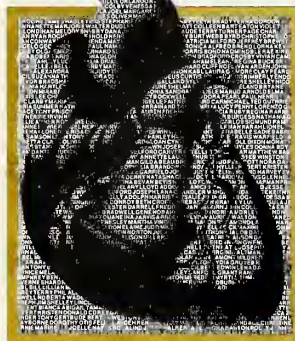
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60, 80, 120, 160 mg

The one you know best
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BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)

INDERAL[®] LA brand of propranolol hydrochloride (Long Acting Capsules)

DESCRIPTION. INDERAL LA is formulated to provide a sustained release of propranolol hydrochloride. INDERAL LA is available as 60 mg, 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective, beta-adrenergic receptor-blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor-stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (60, 80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL Tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg-for-mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure, and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

INDICATIONS AND USAGE. **Hypertension:** INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first-degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. **CARDIAC FAILURE:** Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it is usually advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, eg, dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOLYCEMIA: Beta blockers should be used with caution in diabetic patients if a beta-blocking agent is required. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Following insulin-induced hypoglycemia, propranolol may cause a delay in the recovery of blood glucose to normal levels.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol may change thyroid function tests, increasing T₄ and reverse T₃, and decreasing T₃.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. **GENERAL:** Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL (propranolol HCl) is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Caution should be exercised when patients receiving a beta blocker are administered a calcium-channel-blocking drug, especially intravenous verapamil, for both agents may depress myocardial contractility or atrioventricular conduction. On rare occasions, the concomitant intravenous use of a beta blocker and verapamil has resulted in serious adverse reactions, especially in patients with severe cardiomyopathy, congestive heart failure, or recent myocardial infarction.

Aluminum hydroxide gel greatly reduces intestinal absorption of propranolol.

Ethanol slows the rate of absorption of propranolol.

Phenytin, phenobarbital, and rifampin accelerate propranolol clearance.

Chlorpromazine, when used concomitantly with propranolol, results in increased plasma levels of both drugs.

Antipyrine and lidocaine have reduced clearance when used concomitantly with propranolol.

Thyroxine may result in a lower than expected T₃ concentration when used concomitantly with propranolol.

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination and increasing blood levels.

Theophylline clearance is reduced when used concomitantly with propranolol.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Light-headedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to cataplexy; visual disturbances; hallucinations; vivid dreams; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics. For immediate formulations, fatigue, lethargy, and vivid dreams appear dose related.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasisiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL Tablets to INDERAL LA Capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg-for-mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary, especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—Dosage must be individualized. The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—Dosage must be individualized. Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three- to seven-day intervals until optimal response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—Dosage must be individualized. The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximal dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

*The appearance of these capsules is a registered trademark of Ayerst Laboratories.

Reference:

1. Data on file, Ayerst Laboratories.

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Practice Management

Service Coding and Revenue Enhancement

SERVICE CODING is using numeric designators for procedures performed and alpha-numeric codes for diagnoses. Coding helps communicate complex and arcane medical events and serves the needs of government, health care planners and administrators, risk managers, underwriters and others including practicing physicians.

Service coding began with development of third-party health care financing and automated data processing. Your reimbursement for patient services relies upon efficient service coding.

A recent *Medical Economics* survey notes that third-parties account for over 80% of a physician's gross income in the midwest. There is no significant variation between urban and rural practices. There is variation in practice specialty, but even pediatricians receive over 50% of their gross income from third-parties. Commercial insurers, Blue Shield, Medicare, Medicaid, HMOs and PPOs rely on your coding for claims processing and payment.

Current Procedural Terminology, Fourth Edition (CPT-4) is the most widely accepted nomenclature for the reporting of physician procedures and services under government and health insurance programs. It is revised annually. The standard for coding diagnoses is *The International Classification of Diseases*, 9th Revision, Clinical Modification (ICD-9-CM). You need volumes 1 and 2.

Service coding efficiency is aided by using "laundry list" charge tickets. Preprinted 2-copy sets provide a copy for the patient and another for data entry into your charge and billing sys-

tem. Visualize 3 sections. The top portion has spaces for recording patient name, account number, date and place of service, hospital admission and discharge dates and type of payment (personal, Medicare, workers compensation, HMO, etc). The form has a section

"Service coding is using numeric designators for procedures performed and alpha-numeric codes for diagnoses."

for procedure codes and a section for diagnostic codes. These sections reflect the specialty nature of a physician's practice.

The procedure code section should be organized into groupings, for instance:

- Office services — established patients
- Office services — new patients
- Consultations
- Hospital services
- Emergency services
- Extended care facility services
- Specialty diagnostic services
- Specialty procedure services
- Medications/supplies

Diagnostic codes should be listed in alphabetic order with the exception of "V" codes, which should be last. "V" codes are useful because they classify patient encounters that are neither illnesses nor injuries, for example, prophylactic vaccinations (V03), supervision of normal pregnancy (V22) and general medical examination (V70.0).

At least 80% of the procedures you perform and diagnoses you make should be printed on the charge ticket. You will need a space in each section to enter codes for infrequently used procedures and diagnoses.

Next month, the relative values method (RVS) for pricing physician services will be discussed.

Material for this column is furnished by McGladrey, Hendrickson and Pullen, Des Moines.

Drug Therapy Review

JOHN E. KASIK, M.D., Editor

Researching New Drugs

THE APPROACH TO DEVELOPMENT of new drugs has undergone marked changes in the past few decades. As outlined below, today's approach is far more directed.

The earliest approaches to finding new drugs involved serendipity. When various substances (mostly plants) were consumed and a reaction noted, a potential new drug may have been found. Indeed, herbalists dominated what passed for drug development for centuries. They can be credited with finding such drugs as opium, digitalis, quinine and rauwolfia.

Sources of New Drugs

With development of modern chemistry, especially organic chemistry, thousands of new chemicals were synthesized. To test these for potential utility as drugs, pharmaceutical companies set up screening programs. The initial screening generally involved administration of the chemical to mice. These were carefully observed. If an effect was noted, the agent would be examined by more specific screening techniques for that effect (e.g., for diuretic activity if urine flow increased, CNS stimulation if animals showed increased movement, etc.). This approach left much to be desired and not infrequently actions would be missed.

Occasionally a new drug action is noted after a drug is marketed or first used clinically. The diuretic activity of the organic mercurial compounds was discovered first in man as a side effect of a mercurial drug being used as

an antisyphilitic agent. The diuretic activity of the carbonic anhydrase inhibitors was noted first in man as a side effect of the antibacterial drug sulfanilamide. The hypoglycemic action of the sulfonylureas was also discovered in man when another antibacterial sulfa was first being tested. This manner of discovery is still with us, as witnessed by the discovery of the action of minoxidil on hair growth while it was being used as an antihypertensive agent and the wrinkle reducing action of retin A while it was being used to treat acne.

Receptor Approach

Today, many pharmaceutical companies have ended their nondirected screening programs. In their place are programs designed to develop a specific type of agent, for example, an agonist or antagonist of a specific receptor. The receptor approach combines the talents of organic chemists and pharmacologists, but leads are followed in a more sophisticated manner such as using computers to aid in the designing of new drugs.¹ Thus, any molecule that shows activity can be examined for possible structural changes that would enhance activity and/or produce a more specific acting compound. This approach has led to clarification of types and subtypes of various receptors.

Agents developed in this manner include H-2 antihistamines for suppression of HCl secretion and adrenergic β -1 and β -2 blockers for use in hypertension and cardiac arrhythmias. Current areas of research include 5-hydroxytryptamine receptors, purine receptors, dopaminergic receptors, enkephalin receptors, immune function receptors (interleukin), excitatory amino acid receptors as well as continued work on adrenergic receptors. As more detailed information becomes available on the

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

3-dimensional aspects of macromolecules (enzymes, nucleic acid, etc.), it will be possible, using computer graphics, to design novel chemical structures that will interact with receptors on these molecules.

Developments in molecular biology have begun to be and will become even more prominent as a source of new drugs. The discovery of second messengers in cells has resulted in major searches for agents to interact with these systems. As more of the chemistry of cells is elucidated, more sites for development of drugs will be indicated.

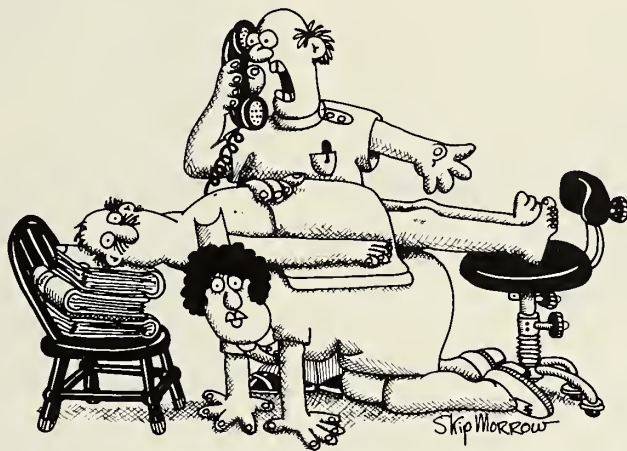
Limiting areas to which a drug distributes has received attention and various techniques have been employed to achieve this goal. Limitation of systemic effects can be achieved if a manner or route of administration can be used which directs the active agent more specifically to the desired site of action. The development and use of inhalational forms of administration for agents such as adrenocorticosteroids and β -2 adrenergic agents used in the treatment of

asthma had resulted in a limitation of the actions of these therapeutic agents primarily to the lungs, and thus markedly decreased undesirable systemic actions. Another approach to the area of distribution has been to alter the structure of a molecule to decrease its entry into the CNS. As a result, agents whose site of actions is outside the CNS will exhibit no or fewer CNS actions. The marketing of terfenadine (Seldane), an H-1 antihistamine, represents such an example. By reducing distribution to the CNS, this agent does not produce drowsiness that is a frequent side effect of most H-1 antihistamines.

Through the use of biotechnology² (which includes monoclonal antibody and recombinant DNA techniques), a number of products have been and are being developed. Examples of such agents are:

Human insulin — A less allergenic molecule than insulin isolated from animal pancreas.

(Please turn to page 232)



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DRUG THERAPY REVIEW

(Continued from page 231)

Growth hormone — This form is free of the "slow virus," a contaminant in preparations from human pituitaries, which causes Creutzfeldt-Jakob disease, a rapidly fatal degenerative neurological disorder.

Muromonab-CD3 — A monoclonal antibody to T3 antigen of human T-cells, which is used to treat acute allograft rejections in renal transplant patients.

Alteplase, recombinant — This substance is a tissue plasminogen activator and has been reported to be twice as effective as streptokinase in thrombolytic therapy for patients with acute myocardial infarction.

Drugs have played an important role in biology. As novel or bizarre responses to drugs

are noted, these agents become the tools to learn more about biological mechanisms. As knowledge of biology expands, this in turn can lead to new areas where drugs can be developed.

Countries of Origin of New Drugs

The United States was once the primary supplier of new drugs to the world, but this is no longer the case. A report dealing with the sources of new drugs³ showed that of the 49 new drugs (i.e., new chemical entities) introduced in 1986, Japan topped the list as the originator of 14 drugs. The U.S. was second with 10 agents and the remaining 25 came from 8 western European countries. (Table 1.)

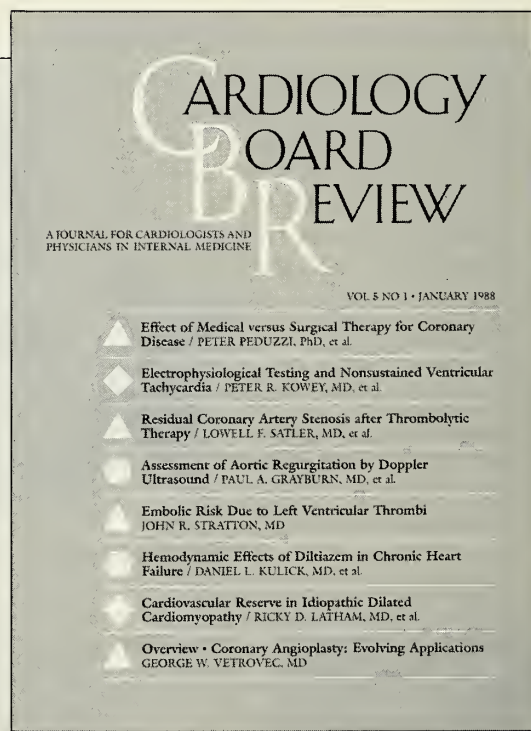
When countries where the drugs were first marketed are compared,³ Japan again leads the list. See table listed below. Of the 49 new chemical entities, 20 were marketed first in Japan. Not only do the Japanese originate their

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*Journals reviewed include: *Circulation*, *American Heart Journal*, *Journal of the American College of Cardiology*, *British Heart Journal*, *Chest*, *The American Journal of Cardiology*, *The New England Journal of Medicine*, *Annals of Internal Medicine*, *American Journal of Medicine*, and *The Journal of the American Medical Association*.

TABLE 1
NEW CHEMICAL ENTITIES INTRODUCED INTO WORLD
MARKETPLACE IN 1986

Country	Number of New Drugs	
	Originated	First Marketed
Japan	14	20
U.S.A.	10	4
West Germany	6	5
France	6	4
Italy	4	4
U.K.	4	3
Switzerland	2	1
Spain	1	1
Monaco	1	—
Sweden	1	—
Belgium	—	1
Brazil	—	1
Finland	—	1
Malaysia/Singapore	—	1
Netherlands	—	1
Philippines	—	1
Portugal	—	1
	49	49

drugs and market them at home, but other countries also add to the new drug market in that country. Hence, over 40% of the new chemical entities reaching the market in 1986 arrived first in Japan. Note that only 4 drugs (new chemical entities) were marketed first in the U.S.

The drugs being developed outside the U.S. are useful and this is clearly indicated by drugs being approved for marketing by the Food and Drug Administration (FDA) in this country.⁴ Of the 18 drugs (new chemical entities) approved in 1986, 14 had previously been marketed outside of this country. What causes some concern is the delay in entering the U.S. of drugs previously marketed elsewhere. The average was more than 7 years, and one had been marketed for as long as 20 years outside of the U.S.

In addition to the 18 new chemical entities, 4 drugs derived from biotechnology were marketed.² At the present time, the U.S. leads the world in the development of drug products using bioengineering. The biotechnology-derived products marketed in 1986 are a monoclonal antibody to prevent rejection of kidney transplants, a genetically engineered vaccine against hepatitis B, and 2 alpha interferons to treat hairy cell leukemia.

Marketing Procedures

The marketing of a drug in this country generally takes about 10 years.⁵ This is broken down as follows: 1 to 2 years of animal and laboratory studies, 6 years of clinical trials (phases 1, 2 and 3) and 2 to 3 years for FDA review. Phase 1 of the clinical trials involves giving the drug to a small number of healthy subjects. Tolerance and pharmacokinetics are evaluated and this generally takes about 1 year. Phase 2 involves treatment of a small number of patients with the targeted disease and lasts about 2 years. Phase 3 involves 1,000 or more patients and lasts about 3 years. While the clinical studies are in the hands of the pharmaceutical companies, the FDA must approve protocols and can ask for additional safety and therapeutic information as the trials progress. Thus, most of the time involved in developing a drug is under the control of the FDA. In other countries, the clinical trials and period of review can be much shorter. As opposed to the 2 to 3 year period for FDA approval of other drugs, biotechnology-derived drugs required an average of only 16 months for approval by the FDA in 1986.

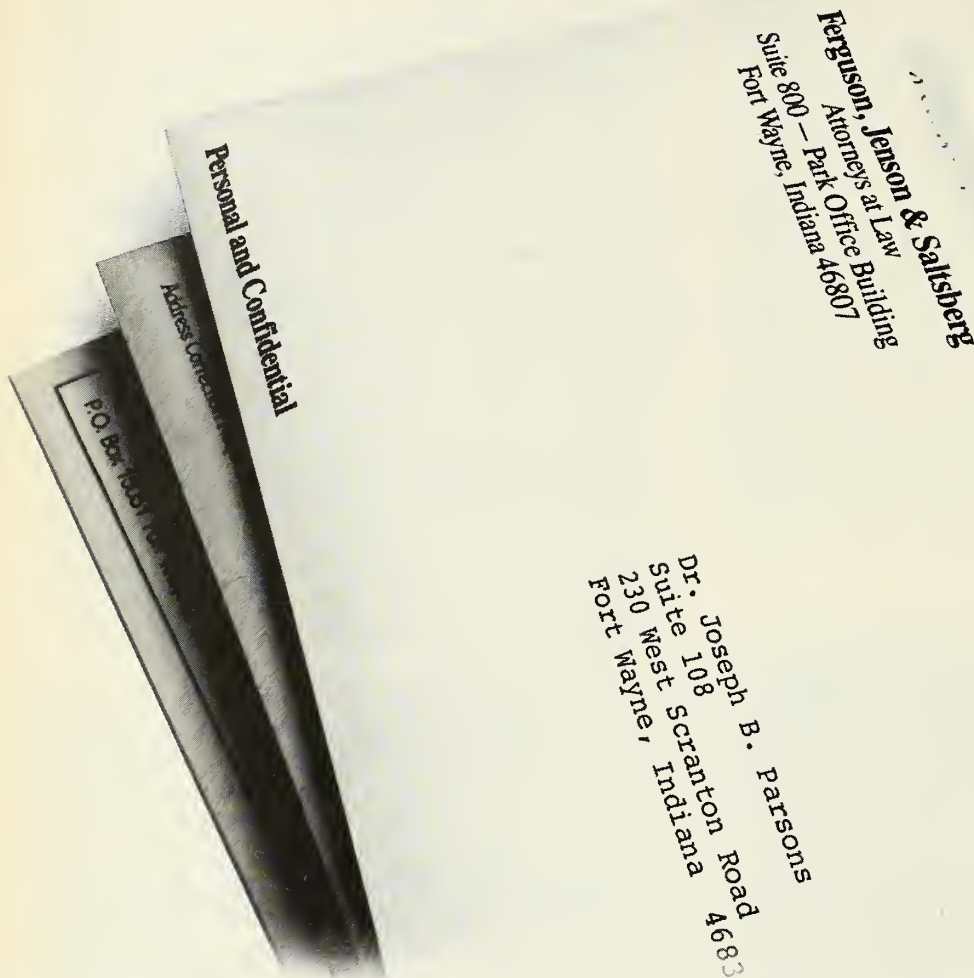
Recently the FDA proposed a rule to speed up the delivery of new drugs to the desperately ill, such as AIDS patients.⁶ The purpose of the new rule is to permit certain experimental drugs to be made available to patients with life-threatening or serious diseases while further testing or review is still in progress.

Another approach that is directed toward increasing the number of useful drugs in this country is the "orphan drug" regulations. This concerns drugs that are to be used for a relatively small number of people and thus it would not be possible to meet the requirements of the FDA for large numbers of patients to be tested in phase 3 clinical studies. Four agents of this type were approved in 1986 and included drugs for the treatment of leprosy, preventing bleeding in hemophiliacs and for the treatment of Paget's disease.

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Iowa Department of Public Health

Environmental Health Protection

THE IOWA DEPARTMENT OF PUBLIC HEALTH (IDPH) is engaged in a wide variety of activities directed at protecting Iowans from potential and existing environmental hazards. In addition to its more traditional role of dealing with environmental sources of communicable disease, the department has expanded its purview in recent years to the areas of radiation, toxic substances and medical devices.

The department's role in radiation protection is primarily regulatory. Its functions include licensing and inspection of radioactive materials, registration and inspection of radiation emitting machines and certification of diagnostic radiographers. Nonregulatory activities include responding to incidents, participating in reactor exercises, evaluating potential or perceived hazardous situations, surveying nonionizing radiation sources and answering public inquiries.

Recently, public education has been extended in the area of radon indoor air pollution. Recognition of this naturally-occurring gas as a significant potential cause of lung cancer has generated a great deal of media and public concern. Some of the areas to be addressed by the department include:

- A statewide radon survey to establish the scope of radon in homes.
- Continued educational efforts to increase public awareness of the issue and its implications.
- State certification of commercial providers of home radon measuring services.
- Training of house contractors to construct radon-proof homes and provide remediation of existing structures.

Radiation Control

On January 1, 1979, statewide radiation control legislation (*Code of Iowa*: Chapter 136C) went into effect enabling the IDPH to assure the safe installation, operation and use of ionizing radiation sources through rulemaking, registration and inspection. These radiation sources include x-ray machines, accelerators, radium and other radioactive material not under the jurisdiction of the U.S. Nuclear Regulatory Commission (NRC).

The department established a radiation control program in July of 1979 and promulgated rules which became effective July 1, 1980. The rules adopted were extracted from those recommended by the National Conference of Radiation Control Program Directors, Inc. and reflect several decades of experience by other radiation control programs. These rules basically address safety requirements associated with equipment. However, they also include stipulations regarding maximum exposure levels, operating procedures, safety instructions, warnings and patient protection.

In subsequent years, amendments to the legislation and rules increased the scope of the department's involvement in radiation protection. Under a July 1, 1986 agreement between the NRC and the State of Iowa, the department assumed regulatory authority over essentially all radioactive materials in the state. The NRC does not relinquish authority over nuclear reactors, weapons or federal facilities. As a result of this agreement, the IDPH is responsible for assuring the safety of all sources of ionizing radiation in the state except those retained as designated above.

On January 21, 1987, rules went into effect which required all nonpractitioners to obtain a permit before operating an x-ray machine as a diagnostic radiographer. To maintain their permits, radiographers must take approved continuing education courses regularly.

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IOWA DEPARTMENT OF PUBLIC HEALTH

(Continued from page 235)

Misadministration reporting, an additional requirement which recently went into effect, is of significance to medical users of radioisotopes. Under this provision radioactive material licensees must report misadministrations occurring after January 6, 1988. The degree of misadministration and the corresponding reporting period are prescribed in the rules. Misadministration reporting is required by the NRC and had to be adopted by the state to maintain compatibility.

There are over 5,800 x-ray machines, approximately 2,400 diagnostic radiographers and almost 200 radioactive material licensees in Iowa. During the period July, 1986–June, 1987 over 500 x-ray machines and 117 radioactive material facilities were inspected.

Toxic Substances

In addition to radiation protection, the department has expanded its scope to include toxic substances. The 3 major activities in this area include surveillance of occupational health events associated with toxic materials, health hazard evaluations in the workplace and health assessment of toxic waste sites. All these activities were initiated under contracts with federal agencies. It is anticipated that eventual state support will continue these efforts.

The effort to establish a program for monitoring occupational health events associated with toxic sources began in October 1984. This activity was federally sponsored under a cooperative agreement with the Centers for Disease Control (CDC). Prior to that time the state morbidity and mortality data bases were not set up to retrieve such information. For instance, no uniform entry of the deceased person's occupation and industry were included in the retrievable data base. Therefore, no comparison of up-to-date standard or proportional mortality ratios was possible. This information is now retrievable and can be used in monitoring sentinel health events.

In addition, prior to the project cancer was the only noncontagious, reportable disease. Today plans are underway to promulgate rules which include toxic substance effects and in-

juries as reportable diseases. Because of the rural nature of Iowa, this morbidity data base has been designed to reflect agriculturally related health events.

Exposure to toxic substances in the workplace is regulated under the Occupational Health and Safety Act and enforced by the Iowa Department of Employment Services. That agency also provides consultation to employers on maintaining conditions in compliance with OSHA requirements. Nevertheless, situations arise in which apparent work related disease occurs without a readily apparent causative agent. In these cases the IDPH initiates a Health Hazard Evaluation (HHE) to investigate and ascertain the etiology. This activity was begun in July 1984 and conducted for 2 years under a cooperative agreement with the National Institute for Occupational Safety and Health (NIOSH) of the CDC.

A third area of departmental activity in toxic substance assessment involves toxic waste sites. Under federal Superfund legislation, the U.S. Environmental Protection Agency (EPA) is designated as the primary agency for managing remediation of these sites. This law also designates the Agency for Toxic Substances Disease Registry (ATSDR) as the federal agency responsible for conducting health assessments at these sites and determining the need for further health effects or toxic substance exposure studies. These health assessments are limited to sites on the national priorities list. In October 1987 the IDPH was awarded a 3-year cooperative agreement with the ATSDR to conduct health assessments in Iowa in lieu of ATSDR. It is anticipated this activity will continue beyond the tenure of the existing project.

Medical Devices

The Food and Drug Administration (FDA), among its other national mandates, regulates the manufacture and introduction of medical devices. As a part of this responsibility it has monitored the occurrence of device malfunctions and resulting human injuries. In equipment in which the frequency of adverse effects has been most pronounced, the FDA has sought to ascertain the causative mechanism, whether it be product defect, normal wear and tear or user error.

In order to fully evaluate these products, the FDA has contracted with state health agen-

cies to conduct investigations of specific medical devices to determine performance under actual use conditions. In October 1985 the IDPH participated in such a contract in which anesthesia gas delivery systems (AGDS) were randomly sampled and tested to establish the degree of safe operation and efficacy. Areas of deficiency were observed, particularly in the appurtenant safety equipment, and a report described the findings. Similarly, a study of defibrillator use and maintenance was conducted beginning in October 1986 and a report was written. Currently, a survey of AGDS use and another of dialyzer cartridge reuse efficacy are being conducted.

In addition to the above federal projects, the IDPH provides services to the Iowa Board of Dental Examiners by inspecting anesthesia equipment and practices employed by dentists. The board licenses dentists who perform general anesthesia.

Other activities in which the IDPH participates with respect to environmental health include inspection of asbestos and PCB contaminated facilities for the EPA. Results of these inspections are submitted to EPA which subsequently enforces compliance. Also, required inspections for funeral homes, sanitary surveys and complaint responsive investigations are conducted.

March 1988 Morbidity Report

Disease	Mar. 1988 Total	1988 to Date	1987 to Date	Most Mar. Cases Reported From These Counties	Disease	Mar. 1988 Total	1988 to Date	1987 to Date	Most Mar. Cases Reported From These Counties
AIDS	3	7	8	NA	bacterial	10	35	18	Scattered
Amebiasis	0	2	10		meningococcal	0	0	3	
Brucellosis	0	1	2		Mumps	5	24	111	Des Moines, Linn, Lucas, Polk, Washington
Chickenpox	1288	3317	3703	Scattered	Pertussis	8	15	3	Clinton, Story, Woodbury
Campylobacter	23	49	33	Scattered	Rabies in animals	5	28	53	Butler, Davis, Dickinson, Keokuk, Osceola
Cytomegalovirus	1	1	5	Johnson	Reye Syndrome	0	0	0	
Eatons Agent Infection	4	17	23	Des Moines, Linn, Marion, Polk	Rheumatic Fever	0	0	0	
Encephalitis, viral	2	6	0	Polk, Woodbury	Rubella				
Erythema Infectiosum	21	28	265	Scattered	(German measles)	0	0	0	
Gastroenteritis (GIV)	2807	8104	7130	Scattered	Measles	0	0	0	
Giardiasis	20	74	64	Scattered	Salmonellosis	4	10	32	Jasper, Polk, Scott, Washington
Hepatitis, A	5	18	44	Black Hawk, Johnson, Linn	Shigellosis	16	43	7	Scattered
Hepatitis, B	4	22	36	Black Hawk, Clinton, Linn	Toxic Shock Syndrome	0	2	2	
Hepatitis, Non A-B	0	4	9		Tuberculosis				
Hepatitis type unspecified	0	1	2		total ill	7	13	8	Dubuque, Marion, Polk, Scott, Story, Wapello, Woodbury
Herpes Simplex	89	254	261	Scattered	bact. pos.	6	9	18	Scattered
Herpes Zoster	0	0	0		Typhoid Fever	0	0	0	
Histoplasmosis	0	3	5		Venereal diseases				
Infectious mononucleosis	13	37	77	Scattered	Gonorrhea	64	396	755	Scattered
Influenza, lab confirmed	28	83	63	Scattered	Chlamydia	226	901	849	Scattered
Influenza-like illness (URI)	5010	17885	16198	Scattered	Syphilis	1	3	6	Polk
Legionellosis	0	4	5						
Malaria	0	0	0						
Meningitis aseptic	4	11	5	Harrison, Johnson, Lee, Scott					

Other Non-Reportable Diseases: Yersinia — 1, Johnson.

Medical News/Products and Programs

LIFE SAVING DRUG NOW AVAILABLE THROUGH AREA HOSPITALS

A drug for countering intoxication caused by some forms of the heart medication digitalis now is available through area hospitals. Digibind®, Digoxin Immune Fab (Ovine), is expected to be used in patients who experience potentially life-threatening digoxin and digitoxin intoxication — less than 1% of patients taking digitalis medication. The drug is a highly specific and effective means of rapidly reversing various potentially life-threatening cases of digitalis intoxication including those arising from massive overdoses. The antidote rapidly binds and inactivates digoxin and digitoxin in the body with most patients responding to treatment within 30 minutes. Digibind® is derived from digoxin antibodies. It was developed by Burroughs Wellcome Co. and has been marketed since 1986. Initially Digibind® was only available through a limited number of hospitals throughout the United States. Now it is more widely available in local hospitals. Digibind® is made of purified fragments of digoxin specific antibodies. An antibody is a protein substance that has the ability to bind a substance (antigen) and render it inactive. To obtain the antibody, sheep (ovine) are injected with digoxin linked to human serum albumin. Because the human serum albumin-digoxin complex is not a natural protein for the sheep, an antibody is formed that will recognize and bind digoxin and digitoxin.

SPACE AGE, ULTRA-COLD TREATMENT FOR METALS

This treatment improves the performance of metal some 200 to 300% according to industry and university studies and is now being applied to surgical instruments by Phoenix-based Shamrock Industries, Inc. Instruments and accessories that are all metal are treated in a computerized, deep cryogenic process at temperatures ranging from -300°F to -320°F. The benefits are surgical instruments stay sharp 50 to 200% longer; instru-

ments remain in use longer; the deep cryogenic process makes instruments tougher, increasing their resistance to corrosion, abrasion and pitting; less metal is removed during sharpening, permitting more redressings and only one deep cryo treatment is required during the life of the instrument.

BIOTECHNOLOGY REPORT — With appropriate safeguards, biotechnology — including such techniques as recombinant DNA and monoclonal antibodies — can be a great boom to mankind, according to the report *Biotechnology: An Introduction*, published by the American Council on Science and Health (ACSH), an independent scientific organization. Medical advances made possible by biotechnology include new diagnostic tests, artificial hormones, immune system regulators, enzyme drugs, safer vaccines and potential future treatments for heritable diseases, the ACSH report states. To obtain a copy of *Biotechnology: An Introduction*, send a self-addressed stamped (66 cents postage), business-size (#10) envelope to Biotechnology Report, ACSH, 47 Maple Street, Summit, New Jersey 07901.

TRANSPARENT FILM DRESSING — Johnson & Johnson Patient Care, Inc. announced the introduction of the world's smallest transparent film dressing, BIOCLUSIVE® Mini. The 1½ in. x 1½ in. sterile, hypoallergenic dressing was specially designed to meet the dressing needs of neonatal and pediatric health care professionals for intravenous (IV) sites, small incisions or wounds and aspiration patches. In addition to its small size, BIOCLUSIVE® Mini's transparency allows for easy monitoring of the site without removing the dressing. Changing the dressing fewer times minimizes tissue trauma to delicate skin and saves time and money. BIOCLUSIVE® Mini also forms a bacterial barrier over the wound or IV site helping to prevent infection.

AIDS Education

The March issue of *IOWA MEDICINE* is perhaps more relevant than most of us appreciate. Even physicians in rural counties will be confronted with HIV positive patients and their families. In August of 1987, we were shocked when a 19-year-old girl home from college (also in northwest Iowa) requested STD tests because she had been raped. Her Elisa test was positive twice, her Western Blot test was positive and further history developed that she had been sexually involved for 8-10 months with an ex-IV drug user who was an "asymptomatic carrier."

Because of this first-hand experience, we put together an educational program that was presented to all schools in the county except one. We targeted 7th, 8th, 9th, 10th, 11th and 12th grades. One school felt our presentation was "too controversial." The 4 schools that cooperated were very instrumental in guiding us and making the program interesting and appropriate. Teachers discussed our presentation ahead of time with their sociology and speech classes and catalogued the students' questions for us. They cooperated by making overhead projections, copying the handout we authored and giving it to each student to take home and discuss. Attendance at the program was voluntary and parents were invited to attend.

One of the main themes of the March issue is "Educate the physician to be involved in education of the public about AIDS." This concept cannot be overemphasized. Ways this might be implemented include:

- Become knowledgeable about the scientific aspects of AIDS. It is extremely important not to talk about morals, ethics, idealistic sexual values, religion, etc. The youth will tune you out immediately if you do.

- Make a time commitment for AIDS education.

- Work through the school administration. They are experts and can be unbelievably helpful.

- Keep it relevant and interesting, about 30-45 minutes in length, interactive, humorous and focused on the group you are addressing.

- Allow time to answer questions.

- Learn not to blush when the audience claps at the completion of the presentation.

We have made available the "generic talk" we presented in the schools and a shorter handout that we gave to the audience. These can be obtained from the Iowa Medical Society. They are not copyrighted. With some changes, we have presented it to other groups including the ministerial association, Rotary, fire department, etc. We have a dream, and I am sure it is one shared by the IMS AIDS Task Force. The dream is that every county in Iowa will have at least one physician available as a public AIDS resource. — T. M. Gary, M.D., F.A.A.F.P., *Cherokee, Iowa.*

Historical Vignettes

Reminiscences

ONCE HAD A LOVELY conversation with Ben Synhorst regarding his long career as a Des Moines general surgeon. During this conversation and a tape recording for Iowa Medical Society historical records, he recalled the lighter moments of his long practice.

One story was of a time at Methodist Hospital when he, William Hornaday, Sr. and Frank Fordyce were doing cases at the same hour and used adjoining lockers for their clothes (in those days none were locked). Dr. Hornaday finished his case first, mistakenly got into Dr. Synhorst's locker and put his clothes on. Since Ben was several sizes larger and taller, this caused a comic effect. Frank walked in and went into hysterics. He asked Bill if he thought his clothes fit okay and Bill thought they might be a little loose. Then Ben walked in, they all had a great laugh and convinced Bill he had gotten the wrong set of clothes.

Another story also involved Frank Fordyce. A woman who needed major surgery consulted Ben about her problem. It was properly diagnosed and plans were made for surgery. A few days later, this same patient came to Frank's office, related the story up to that point and said she wanted Frank to do the surgery since she had heard Dr. Synhorst was

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lefthanded. Frank complied, but never told her he was also lefthanded.

We enjoyed recalling the many times he came to the small Indianola hospital to do major surgery. The hospital was a remodeled large 3-floor residence and had 9 hospital beds, 3 bassinets and a large room for surgery and deliveries. Ben would arrive with a sterile surgical pack and a scrub nurse. Dr. Ernest Shaw and I would take turns giving the anesthetic (drop ether) and assisting.

Looking back, it was very primitive. There was no way to use a cart to transport the patient, so 3 or 4 of us carried the patient to and from the operating room. We had a suction and oxygen machine and simple I.V. fluids and plasma, but no blood was available. The surgical charge for a simple case ranged from \$100 to \$150 and more complicated ones up to \$250. This included the assistant's fee. The person giving the anesthetic received \$25. The hospital charged \$7-\$10 a day and, in case of a Caesarean, \$3 extra for the baby. The patients received excellent care and neither of us could remember losing a case or any malpractice suits. — *Clare Trueblood, M.D., Indianola.*

First Blood Alcohol Test

Author's Note: I have purposely omitted names and dates, but I believe there are very few folks who would dispute these recollections of the early days of chemical tests in Iowa and their impact on highway safety.

SHORTLY AFTER I STARTED practicing pathology at Mercy Hospital in Mason City, I was asked to be a witness in a drunken driving case. I consulted some of my older doctor friends and they advised against it. "The defense lawyer will make a monkey out of you," they said. "The clinical symptoms of drunkenness can come as a result of many other conditions and, as an expert on the stand, you're at their mercy."

We had chemical tests for a number of substances in blood, but I could not find a test for alcohol except to distill a sufficiently large sample of blood and take the specific gravity reading — not a very practical method for routine use. After a long search, I found my way to the National Safety Council Committee on Intoxication. They told me of a test used in

Europe called the Nicoloux test and gave me the name of a toxicologist in Milwaukee who had experience with it.

The test he used was based on changing the alcohol to an aldehyde. He used a color comparison with a set of standards he created using various known amounts of alcohol. The color change ranged from yellow to green to blue.

Getting absolute alcohol to make up the standards was the first problem. I had to obtain a special license from the Liquor Commission. They ordered a gallon of absolute alcohol for me at a cost of \$30. I know where some of that gallon still exists, I expect no longer absolute.

I had to sell the police officers and county attorneys on the use of the test. I talked to many groups of officers, service clubs and anyone else who would listen.

No lawyer would touch a case where the test was used. Too many legal questions involved. Finally a county attorney who was not a law school graduate decided to use it. The site of the first fatal automobile accident in Iowa is a short way north of Hampton. The same site was the locale of another accident in which 3 people burned to death and the driver of the responsible car was tested for alcohol content in his blood. In his first manslaughter trial, the test was not admitted and he was not convicted. The test was accepted in a second trial for driving while intoxicated. He was convicted and spent a year in prison.

In the meantime, Judge Graven had allowed the test admitted but the defendant pled guilty and there was no trial.

The Mason City police started using the test quite early. There were bets in headquarters on test outcomes based on observing the accused. The police got pretty good at guessing the results.

In one case just before Thanksgiving, a good friend of mine was on a jury that brought in a not guilty verdict. When I asked her why, she said there were a few holdouts but since it was Thanksgiving Eve, the women wanted to go home and put their turkeys on to cook. So much for the jury system.

There were many attempts to break the test. One judge allowed the defense attorney (a friend of his) to read a paragraph from a JAMA article which stated a difference between urine and blood determinations existed.

The judge refused to let me read a paragraph which supported my position. I was speaking to many groups at the time and I always told this story. The judge never did it again.

In many cases I testified as to the minimum amount of alcohol it would take to produce the blood level shown by the test. One attorney thought he had a way to impeach my testimony. Using a blackboard and lots of figures, he showed that the blood could not hold that amount of alcohol. He forgot about all the alcohol in the rest of the body. We sparred, going from metric to avoirdupois and back again, until he became very confused.

The color test got me into trouble once. The lawyer did a slight of hand and claimed I could not tell 2 standards apart. He won that case so I went to a titration method. I never met an attorney who had taken quantitative chemistry.

One doctor testified in a trial that the method I used was not accurate because I did

not use a large enough sample of blood. He claimed experience while a medical student at the University. A transcript of his testimony and some investigation showed his perjury and 2 trips to the grievance committee took care of that. He left the state. His attorney came to my home town to check up on me, asking questions such as whether I had a nurse with me when I examined female patients. He started his search in a bank where I served on the board and it was obvious what he was up to. We met later in another case and both of us were very careful about what we said.

There were attempts to steal specimens before they could be tested, but the most fun was in the courtroom. Taking the guess work out of DUI cases was interesting, especially matching wits with defense attorneys who wanted to beat the chemical tests. I never thought chemical tests would be as well received as they are today. — *Harold W. Morgan, M.D., Clear Lake, Iowa.*

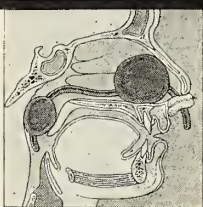
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CUMULATIVE INDEX

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The changes in health care and health coverage in the last five decades have been tremendous. And, through it all, Iowa's Blue Cross and Blue Shield Plans have set the pace. All the while, we have worked diligently to help our customers get the most out of their health care dollars, to provide excellence in service and to give our members cost-efficient, quality benefits. Like Total Health Network of Iowa and Family Health Plan, our innovative health maintenance organizations...ALLIANCE Select, our preferred provider program...and Delta Dental Plan of Iowa.

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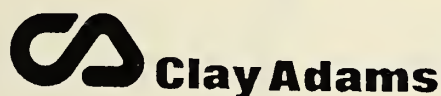
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About Iowa Physicians

Dr. William Audeh and **Dr. John Wollner** have opened specialty clinics at Marengo Memorial Hospital in Cedar Rapids. Dr. Audeh has begun an outpatient surgical clinic and Dr. Wollner has begun a dermatology clinic. Both physicians currently practice in Cedar Rapids. **Dr. Brian P. Sires** has joined **Dr. Marc Hines** at Ottumwa Neurological Associates and Health Concepts Specialty Clinics. Dr. Sires received the M.D. degree from the U. of I. College of Medicine and served as a neurological consultant at the U.S. Veterans Administration Hospital outpatient clinic in Winston-Salem, North Carolina. **Dr. Krishan G. Gupta** has moved his urology practice from Muscatine to Atlanta, Georgia. Four Quad City urologists

will provide services at the Muscatine office — **Drs. James A. Holte, William C. Mobley, Paul L. Rohlf and John H. Smith.** **Dr. Robert M. Carney** has begun practice for Mercy Care in Belle Plaine after 18 years in private practice in Brooklyn. **Dr. Leah M. Willson** has become a fellow in the American Academy of Pediatrics. Dr. Willson received the M.D. degree from the University of Missouri School of Medicine, Columbia, Missouri and completed her residency at the University of Missouri-Kansas City School of Medicine. She practices at the Park Clinic in Mason City. **Dr. Richard Walton** has relocated to a northwest Indiana hospital after serving nearly 5 years as a surgeon for the

(Please turn to page 244)



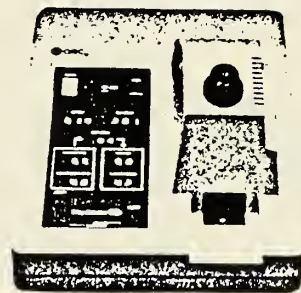
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ABOUT IOWA PHYSICIANS


(Continued from page 243)

Gilfillan Clinic in Bloomfield. **Dr. Herry H. Kijner** is now associated with Covenant Medical Center, Waterloo, in the practice of pediatrics. Dr. Kijner received the M.D. degree from Nationale University in Bogota, Columbia and served residencies at Cambridge University and Hammersmith Hospital, both in England. Prior to locating in Waterloo, Dr. Kijner was director of neonatology at Michael Reese Hospital and Medical Center, Chicago and was also in private practice in Florida and Wisconsin. **Dr. Carol Saunders** has opened a pediatric practice in Newton. Dr. Saunders received the M.D. degree at the U. of I. College of Medicine and served her residency at Blank Children's Hospital, Des Moines. She was previously in private practice in Rolla, Missouri.

Deaths

Dr. Milton E. Barrent, 71, Clinton, died February 26 at the Jane Lamb Health Center. Dr. Barrent received the M.D. degree at the U. of I. College of Medicine. He practiced surgery in Clinton for 35 years before retiring in 1986. Dr. Barrent was a member of the American College of Surgeons and was active in sports medicine, serving as the Clinton High School team doctor for 30 years. He received the University of Iowa Alumni Association Award for distinguished community service in 1980.

Dr. Gilbert J. Cuthbertson, 32, Iowa City, died February 28 of injuries suffered in a plane crash near North Liberty. Dr. Cuthbertson received the M.D. degree from the University of North Carolina School of Medicine, Chapel Hill and completed his residency in pediatrics at the University of Iowa Hospitals and Clinics. At



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the time of his death, Dr. Cuthbertson was a fellow in pediatrics studying infectious diseases.

Dr. Megan C. Danton, 31, Iowa City, died February 28 of injuries suffered in a plane crash near North Liberty. Dr. Danton received the M.D. degree from the University of North Carolina School of Medicine, Chapel Hill and completed her residency in pathology at the University of Iowa Hospitals and Clinics. She was a graduate student working on her MBA at the University of Iowa.

Dr. Artemus B. Henningsen, 76, Clinton, died February 19. Dr. Henningsen received the M.D. degree from the U. of I. College of Medicine and was a dermatologist in Clinton for 30 years prior to his retirement in 1968.

Dr. Robert G. Collier, 53, Davenport, died March 12 at Davenport Medical Center. Dr. Collier received the M.D. degree from the University of Illinois Medical School, Champaign, Illinois and completed his residency at the University of Iowa Hospitals and Clinics. He had practiced medicine in Davenport since 1969 and was a member of the American College of Surgeons.

Dr. DeVoe O. Bovenmyer, 86, Ottumwa, died March 8 at Ottumwa Manor. Dr. Bovenmyer received the M.D. degree at the U. of I. College of Medicine and practiced medicine in Ottumwa from 1932 until his retirement in 1979. He was a life member of the Iowa Medical Society.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasymphathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly not must be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

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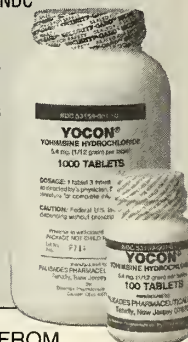
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

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References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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In the Public Interest

Cultivating Safety On The Farm

FARMING CAN BE hazardous to your health. According to the Iowa Division of Labor Services, 41 Iowans died in farm accidents in 1986. Farm injuries reported under workers' compensation — probably a small percentage of all farm injuries — totalled 502. In addition to safety hazards, farmers are continuously exposed to airborne pollutants such as chemical sprays and grain dust.

However, several efforts are underway to help more farmers stay safe and healthy in their chosen occupation. A national conference entitled "Agricultural Occupational and Environmental Health: Policy Strategies for the Future" has been planned for September 18-21 in Iowa City and September 29-30 in Des Moines. Conference attendees will include farmers, ranchers, health care providers including physicians, policy makers, farm organizations and others interested in the health and safety of farm families.

The conference is being organized by the University of Iowa and Iowa State University. Major funding has come from Pioneer Hi-Bred International, the Northwest Area Foundation of St. Paul, the Iowa Farm Bureau Federation, John Deere and Land O' Lakes.

"Agriculture is one of the most hazardous occupations, as was clearly documented in the Des Moines Register's Pulitzer Prize-winning 'A Harvest of Harm' series a few years ago," says Kelley Donham, M.D., a professor in the UI Institute of Agricultural Medicine and Occupational Health. "Our ultimate objective with the conference is to reduce health and safety hazards on the farm, something that hasn't yet been dealt with in a programmatic way."

In the first conference session in Iowa City, technical working groups will identify re-

search and service needs and pertinent policy issues. The second and third sessions in Des Moines will consist of policy working groups on September 29 and a public forum on September 30. Topics to be discussed in the public forum include safe use of chemicals, respiratory diseases, accidents, pesticide safety and how to provide health and safety services for farmers.

After the conference, a summary report containing recommended policy strategies will be published and distributed to pertinent public interest groups, key legislators and policy makers nationwide.

Dr. Donham is also director of a new state-funded program called the Iowa Agricultural Health and Safety Service Pilot Project. The project was scheduled to begin last month at Sartori Memorial Hospital in Cedar Falls and the Marshalltown Medical-Surgical Center. Later this year, the project will be extended to Guttenberg Municipal Hospital and Central Community Hospital in Elkader.

The program consists of a free series of educational programs and an expanded program farmers can attend for a fee. The program offers screenings for respiratory problems, cancer and hearing loss and a farm survey of safety hazards by an agricultural hygienist.

Under the program, physicians, nurses and emergency medical personnel may receive special training so they can respond better to farmers' health needs.

"We're not seeking restrictive legislation and regulations on the farm community," concludes Dr. Donham. "Instead, we believe all groups concerned will be able to work toward a consensus on ways to make agriculture safer."

May 1988

Iowa Medicine

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Symptomatic response to 'Tagamet' therapy does not preclude the presence of a gastric malignancy. There have been rare reports of transient healing of gastric ulcers despite subsequently documented malignancy.

Reversible confusional states have been reported on occasion, predominantly in severely ill patients.

'Tagamet' has been reported to reduce the hepatic metabolism of warfarin-type anticoagulants, phenytoin, propranolol, chloralhydrate, diazepam, lidocaine, theophylline and metronidazole. Clinically significant effects have been reported with the warfarin anticoagulants; therefore, close monitoring of prothrombin time is recommended, and adjustment of the anticoagulant dose may be necessary when 'Tagamet' is administered concomitantly. Interaction with phenytoin, lidocaine and theophylline has also been reported to produce adverse clinical effects.

However, a crossover study in healthy subjects receiving either 'Tagamet' 300 mg. q.i.d. or 800 mg. b.i.d. concomitantly with a 300 mg. b.i.d. dosage of theophylline (Theo-Dur®, Key Pharmaceuticals, Inc.),

demonstrated less alteration in steady-state theophylline peak serum levels with the 800 mg. b.i.d. regimen, particularly in subjects aged 54 years and older. Data beyond ten days are not available. [Note: All patients receiving theophylline should be monitored appropriately, regardless of concomitant drug therapy.]

Lack of experience to date precludes recommending 'Tagamet' for use in pregnant patients, women of childbearing potential, nursing mothers or children under 16 unless anticipated benefits outweigh potential risks; generally, nursing should not be undertaken in patients taking the drug since cimetidine is secreted in human milk.

Adverse Reactions: Diarrhea, dizziness, somnolence, headache, rash. Reversible arthralgia, myalgia and exacerbation of joint symptoms in patients with preexisting arthritis have been reported. Reversible confusional states (e.g., mental confusion, agitation, psychosis, depression, anxiety, hallucinations, disorientation), predominantly in severely ill patients, have been reported. Gynecomastia and reversible impotence in patients with pathological hypersecretory disorders receiving 'Tagamet', particularly in high doses, for at least 12 months, have been reported. Reversible alopecia has been reported very rarely. Decreased white blood cell counts in 'Tagamet'-treated patients (approximately 1 per 100,000 patients), including agranulocytosis (approximately 3 per million patients), have been reported, including a few reports of recurrence on rechallenge. Most of these reports were in patients who had serious concomitant illnesses and received drugs and/or treatment known to produce neutropenia. Thrombocytopenia (approximately 3 per million patients) and a few cases of aplastic anemia have also been reported. Increased serum transaminase and creatinine, as well as rare cases of fever, interstitial nephritis, urinary retention, pancreatitis and allergic reactions, including hypersensitivity vasculitis, have been reported. Reversible adverse hepatic effects, cholestatic or mixed cholestatic-hepatocellular in nature, have been reported rarely. Because of the predominance of cholestatic features, severe parenchymal injury is considered highly unlikely.

A single case of biopsy-proven periportal hepatic fibrosis in a patient receiving 'Tagamet' has been reported.

How Supplied; Tablets: 200 mg. tablets in bottles of 100; 300 mg. tablets in bottles of 100 and Single Unit Packages of 100 (intended for institutional use only); 400 mg. tablets in bottles of 60 and Single Unit Packages of 100 (intended for institutional use only), and 800 mg. Tiltab® tablets in bottles of 30 and Single Unit Packages of 100 (intended for institutional use only).

Liquid: 300 mg./5 ml., in 8 fl. oz. (237 ml.) amber glass bottles and in single-dose units (300 mg./5 ml.), in packages of 10 (intended for institutional use only).

Injection:

Vials: 300 mg./2 ml. in single-dose vials, in packages of 10 and 30, and in 8 ml. multiple-dose vials, in packages of 10 and 25.

Prefilled Syringes: 300 mg./2 ml. in single-dose prefilled disposable syringes.

Plastic Containers: 300 mg. in 50 ml. of 0.9% Sodium Chloride in single-dose plastic containers, in packages of 4 units. No preservative has been added.

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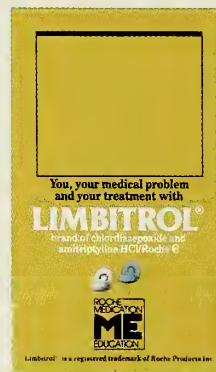
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PLANDEX 35201

President's Privilege



Anything Worthwhile Takes Hard Work

WE MAY HAVE LOST a skirmish, but I don't believe we've lost the war.

Governor Branstad's May 13 veto of the medical liability bill was a disappointment to the many Iowa physicians who have worked diligently for reform of our liability laws. Though the bill was not tort reform and did not include limits on damages sought by the IMS, by capping physicians' insurance costs it was a positive step toward the meaningful liability reform we hope to see eventually.

The political process is unpredictable. The 1988 Iowa Legislature, recognizing the growing effects of the liability crisis, approved a bill they felt addressed important aspects of this complex problem. The governor, who favors caps on damages, vetoed the bill because he philosophically did not believe the state should be in the insurance business. He feared an increase in the number of suits and dollar amounts awarded, which could "exceed the fund" and put a drain on the state treasury.

For this year, Iowa physicians and patients have come up empty. Though we have been dealt a setback, we have come a long way since we first identified tort reform as a top priority for the 1986 legislative session. Some of our gains have been effective, i.e. regulation concerning expert witnesses. Despite

our discouragement over this year's outcome, we must remember we are doing a good job of educating Iowa lawmakers and citizens about this ongoing crisis. We have learned through the years that nothing good comes easily. Public attitude shapes public policy, so we must continue to expend as much effort as possible to benefit our patients and medical practice. The 1989 legislative session will require an all out effort by all Iowa physicians.

This column is my first as your president. I am honored to be your representative and am grateful to all my colleagues who have placed their faith in me. I look forward to an interesting and challenging year.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

Expectations vs. Reality: Young Physicians Speak Out

This month's cover story explores the unique concerns of young Iowa physicians and their perspective on the practice of medicine. Young physicians interviewed for the article were: Sherry S. Bulten, M.D., a Humboldt family physician in her 6th year of practice; James Clemens, M.D., a family physician in Sibley for 4 years; Nile Dusdieker, M.D., a Cedar Rapids gastroenterologist in practice for 10 years; and Kent B. Hartung, M.D., a Red Oak family physician in practice for 3 years.

IOWA MEDICINE: Do you think today's physician is faced with vastly different problems than physicians who entered practice 25 years ago?

Dr. Clemens: I believe there are significant differences. Physicians practicing for a long time would probably agree that, in general, practice is more difficult now because of the amount of intervention in and regulation of the physician/patient relationship. Government and third party control has multiplied just since I've been practicing.

Another difference is that patient expectations are much higher than they were 25 years ago. This results in the medical-legal situation physicians face today. Physicians 25 years ago didn't practice with a great deal of apprehension about lawsuits. None of these things has enhanced the practice of medicine.

A wonderful difference between practice now and several decades ago is the fact that today's physicians can do so much more for patients. We don't have to look at a patient and say 'There's nothing I can do' nearly as often.

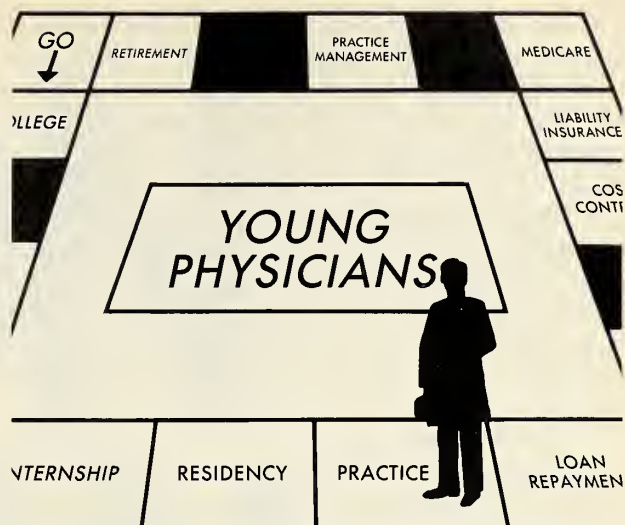
IOWA MEDICINE: Do you believe the younger physician is more aware of the impact of his or her medical decisions on the cost of patient care?

Dr. Bulten: I think this has been a growing, evolutionary process. A long time ago physicians were aware of the impact, then there was a 'middle era' when third parties paid for everything. Now, physicians are again more aware of practicing cost-effective medicine such as not hospitalizing longer than necessary. It's part of younger physicians' training. I don't

"As a new physician, you have to learn to play the DRG game. The challenge is giving good patient care but not getting burned by third party payors."

think of it as a negative or a positive. It's just something that has to be. However, I am extremely concerned about the working poor who have no insurance. I would hate to see us lose the compassionate fee reduction for patients who can't afford the full fee.

Dr. Hartung: I believe more physicians of all ages are aware of the impact their medical



decisions have on the overall cost of patient care. I expected this to be a part of medical practice. What surprised me was how this directly interacts with the business aspect of practicing, i.e. paying malpractice premiums and other overhead as well as dealing with third-party payors.

IOWA MEDICINE: What is most important in your life? Do you believe today's physician has different priorities?

Dr. Dusdieker: I have 2 priorities — to be the best physician I can be and the best husband and father. My wife is a pediatrician at the University of Iowa and we are both very aware of our responsibility to spend time with our family. At home, we discuss medicine very little.

My father was also a physician, a solo practitioner. However, he set his own schedule and didn't let his patients think he was available 24 hours a day. Like him, I'm working very hard to have a balanced lifestyle.

Dr. Clemens: I have some deep Christian commitments. My walk with the Lord, my family and my friends are the most important things in my life. I think there is more group practice today because many physicians have priorities other than medicine. I practice with several other physicians and we're very committed to our call schedule. We all consider our private lives a priority.

Some physicians have an exaggerated sense of responsibility and feel indispensable. This is nonsense. It's an important profession

and I'm proud to be a physician, but I'm not indispensable.

IOWA MEDICINE: Do young women physicians have a special set of concerns that differ from those of their male peers?

Dr. Bulten: I haven't had any problems with discrimination. In fact, there are people who choose me as their physician because I'm a woman.

"I haven't had any problems with discrimination. In fact, there are people who choose me as their physician because I'm a woman."

However, when I graduated from medical school in 1978, we weren't past the "Super Woman" era when they told us we could have it all with very little difficulty. Now, I'm a physician who has also taken on the roles of wife and mother. There are extra responsibilities. I worry or feel guilty that I'm neglecting my practice or my children. Or, I just feel tired.

IOWA MEDICINE: With at least another 25-35 years of practice ahead of you, what changes do you envision in medical practice? What would you like to change for the next 'generation' of young physicians?

(Please turn to page 262)

Dr. Hartung: I would not be surprised to see more government intervention, perhaps a national health insurance. I'd like to see everyone have some sort of health insurance, but I wouldn't like to see the government involved in it.

There will be more physicians and more competition, even in rural areas. Between this and third party intervention, physician incomes will go down. However, there will be better access to care and more time for physicians to be involved in other activities (interests).

Dr. Dusdieker: I foresee a collision between patient demands for state-of-the-art medical care and the demands of government and politicians concerning who will pay for it. The outcome will be decreased quality of care or increased taxes.

Another outcome could be a change in the independence of medicine to the point where

"My physician father passed away in his office when he was in his seventies. I expect to look at retiring at a much younger age."

bright young people won't choose it as a career. Independence and creativity are very important factors in the decision to become a physician. I feel the government will interfere more and more with the good reasons for going into medicine.

I also feel that physicians in training need more information about business, insurance and the legal aspects of practicing.

IOWA MEDICINE: What do you think should be the top priority of organized medicine or the profession as a whole?

Dr. Hartung: Access and affordability of quality care for all and improvement of the liability climate.

Dr. Clemens: The medical profession must figure out a way to cope with the political and economic forces that are undeniably shaping it. More and more, decisions about medical care are being made without the advice or the perspective of physicians being considered. It's frustrating, but I'm too young to retire.

Also, organized medicine must work to

preserve medicine as a profession. Physicians want to be able to provide quality care in the most tolerable situation possible.

Dr. Bulten: I think the top priority of organized medicine has to be limiting medical liability and guiding government regulators of

"Some physicians have an exaggerated sense of responsibility and feel indispensable. It's an important profession and I'm proud to be a physician, but I'm not indispensable."

health care in ways physicians feel comfortable with.

IOWA MEDICINE: How does actual practice compare with your preconceptions?

Dr. Dusdieker: Medical practice is extremely exciting and that's why I went into medicine. I like the constant challenge I knew would be there.

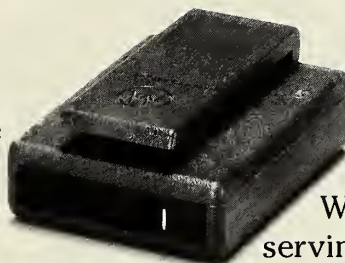
However, the business and legal aspects of practicing are becoming more and more time-consuming. I didn't expect this. With so much interference from third party payors and the government, it's hard to run a practice efficiently. It's very worrisome when third parties are telling a physician how to practice. There is a potential for some real big problems down the road. My physician father passed away in his office when he was in his seventies. I expect to look at retiring at a much younger age.

Dr. Bulten: In general, the patient care is about what I expected. However, the call schedule has not been what I expected. I practice in a rural area and patients are used to seeing their own physician. They often don't want to see the physician who's on call for you.

Dr. Hartung: There have been a lot of changes in medicine just since my residency. There is much more intervention by government and third parties; but, behind it all I understand what they're trying to do. As a new physician, you have to learn to play the DRG game. The challenge is giving good patient care but not getting burned by the third party payors.

But, most days I'm very glad I'm a physician.

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Questions and Answers



Young Physicians: Their Voice in the IMS

The author, a Sioux City family physician and chairperson of the IMS Committee on Young Physicians, discusses the concerns of young physicians and what the committee is doing to address them.

Why did the IMS create its Committee on Young Physicians?

The IMS created a Committee on Young Physicians in 1987 in response to an AMA request that state societies look at issues of special concern for young physicians. The AMA recognized that young physicians (defined as under 40 years old or in practice less than 5 years), have needs unlike those of students, residents or more established physicians. The committee was also formed to dispel the strong perception among many young physicians that organized medicine is not adequately responsive in recognizing or addressing those needs.

To address these issues, a formal Young Physicians Section was created within the AMA, providing each state with the opportunity to have a young physician representa-

tive at national AMA meetings. At these Section meetings, pertinent issues are discussed and brought to the AMA House of Delegates, thus providing a national forum for debate. The Section has also offered direction to each state in the formation of committees or state sections to study the issues important to young physicians.

What are the committee's activities?

Our committee first had to answer several questions. What percentage of Iowa physicians qualify as "young"? How involved are they in organized medicine? What are their chief concerns? Once these questions were answered, the committee looked toward assuring these special needs are addressed within the medical society as much as possible. This is being done by identifying young physicians who wish to be involved in IMS leadership and providing direction in utilizing their talents. Consideration is also being given to sponsoring various training seminars on topics such as leadership, practice management and legislation.

Please tell us about the committee's recent survey of young Iowa physicians. What was its purpose and what did it reveal?

To get the answers the committee needed to begin its work, young Iowa physicians were surveyed. Nearly 500 responded. It was learned that over 90% belong to their county

and state medical society and nearly 70% belong to the AMA. Over half are willing to become involved in IMS committee activities or serve in the IMS House of Delegates. Though the cost of dues was cited as the most frequent reason for not belonging to the IMS, most physicians feel the IMS and the AMA are dealing with pertinent issues.

What are the special concerns of young physicians?

The survey asked physicians to identify priorities, problems and concerns. Many issues facing young physicians are shared by all practitioners, such as the liability crisis. Effects of the oversupply of physicians and negotiating with alternate delivery systems are other problems commonly cited. Young physicians are very concerned about demands on their time and universally place a high priority on time away from work. They asked that the IMS offer opportunities to learn more about finan-

cial and practice management strategies, contract negotiations, practice marketing, insurance and other issues they deal with as they start a practice.

Why is it important for young Iowa physicians to become involved in organized medicine?

When physicians were asked their opinions on the top priorities of organized medicine, 3 areas were most frequently mentioned — the medical liability situation, federal regulation of medicine and high quality care. These are issues on which the IMS and the AMA have focused. No organization can address all issues to everyone's satisfaction but organized medicine gives us a very effective voice. Through this system the concerns of physicians are meaningfully expressed and changes can happen. Those changes are important on all levels. A physician alone has no effective forum. Within organized medicine, each physician makes a difference.

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Human Pulmonary Dirofilariasis

JOSEPH SONG, M.D.
KYUNG-WHAN MIN, M.D.
ALA DAGHESTANI, M.D.
STEVEN ZORN, M.D.
Des Moines, Iowa

Though dirofilaria immitis (heartworm) is most often found in dogs and other animals, humans can become accidental hosts of the parasite. The authors discuss the first Iowa case of focal pulmonary infarct due to dirofilaria in humans.

DIROFILARIA IMMITIS is a common heartworm of dogs and other animals. Infestation of dogs by the parasite is widespread in the eastern and southeastern regions of the U.S. In recent years, this parasite expanded geographically through the Mississippi River region. Canine dirofilariasis has been reported in the Midwest, southern Canada and the rest of the U.S.^{1, 2}

Dr. Song and Dr. Min are pathologists, Dr. Daghestani is a general surgeon and Dr. Zorn is an internist with a specialty in pulmonary diseases. They are associated with Mercy Hospital Medical Center in Des Moines.

The adult worms live in the right ventricle and pulmonary arteries of the dog, the parasite's principal host, and shed thousands of microfilaria per day. Mosquitoes serve as an intermediate host and vector. They transmit the ingested microfilaria, which become infective in 2 weeks, to another animal in subsequent feed. The infective larvae undergo partial maturation in the subcutaneous tissue for 3 to 4 months, then migrate to the right ventricle through the venous channels to reach full sexual maturity and life cycle.

Occasionally, humans become accidental hosts. In humans, the life cycle of dirofilaria immitis seems to be arrested in the subcutaneous tissue and no sexual maturity is accomplished. However, larvae may develop, migrate to the right ventricle and embolize pulmonary arteries, causing pulmonary dirofilariasis. Since 1961 when Dashiell reported the first case of focal pulmonary infarct due to dirofilaria in humans, numerous similar cases have appeared in the literature. According to Kochar, by 1985 64 cases were reported in the United States, establishing dirofilariasis as an emerging zoonosis.^{3, 5-7}

The distribution and frequency of human dirofilariasis roughly correlate with those of animal infestation, most of which aggregates along the Gulf Coast of the eastern and southeastern United States.¹ There have been 2 cases reported in the Midwest; 1 in Wisconsin and another in Michigan.^{3, 8}

We report a case of human pulmonary dirofilariasis we believe is the first in Iowa.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF JUNE 1988

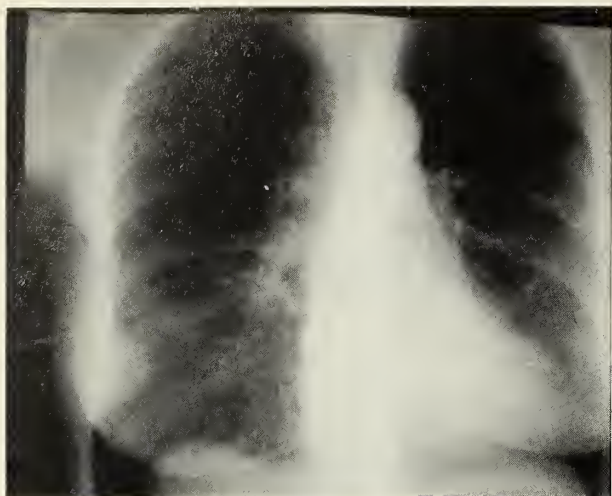


Figure 1. A wedge-shaped pleura-based tumor density is seen in the right lower lobe.

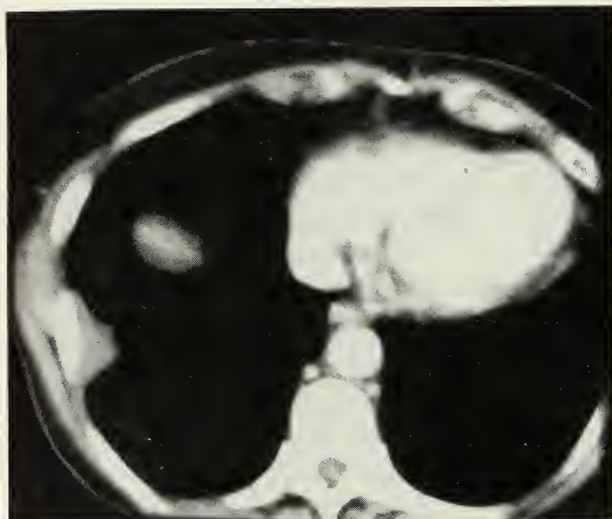


Figure 2. Computerized tomogram study also confirmed the tumor density in the right lower lobe.

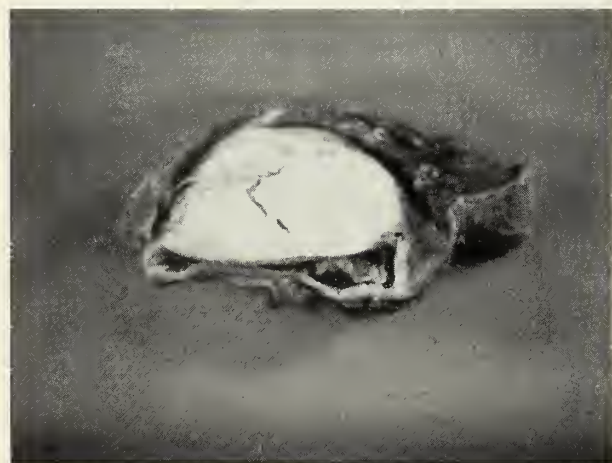


Figure 3. Wedge resection of the lung revealed a caseating granuloma.

Report of a Case

A 72-year-old female was admitted for evaluation of a mass lesion of the right lung found on a routine chest x-ray. She had a history of more than 50 pack/year of smoking and complained of chronic cough with whitish discharge. There was no history of allergies, stroke, seizures, diabetes or hypertension. She was on Synthroid, .15 mg/day for hypothyroidism. She had not traveled out-of-state during the last several years.

Physical examination and routine laboratory studies were noncontributory. Chest x-ray revealed a wedge-shaped pleural-based density which was confirmed on computerized tomogram studies (Figures 1 and 2). No mediastinal disease was noted. A fine needle aspiration revealed no malignant cells. On the third hospital day, an exploratory thoracotomy and wedge resection of a peripheral nodule of the right lower lobe of the lung was performed. She recovered smoothly from the surgery.

Pathology

There was a wedge-shaped area of cheesy necrosis measuring 3.5 cm. on the pleural surface (Figure 3). Microscopically, the lesion consisted of granulomatous inflammation with extensive caseation necrosis. There were branches of pulmonary arteries in the necrotic area in which profiles of variously cut worms consistent with *dirofilaria immitis* were seen (Figure 4).

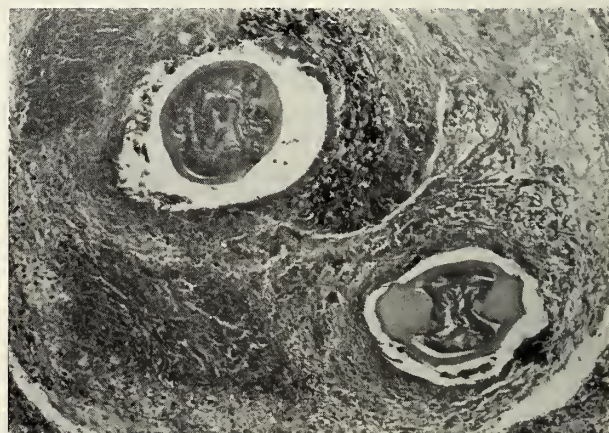


Figure 4. A branch of the pulmonary artery in the granuloma showing 2 *dirofilaria immitis*. Hematoxylin and eosin. 200X

Comment

The gross and microscopic appearance of the pulmonary lesion in this patient is typical of organizing pulmonary infarct. The presence of dirofilaria in the thrombosed pulmonary arteries within the lesion justified the diagnosis of pulmonary dirofilariasis.

Symptoms of pulmonary dirofilariasis included chest discomfort, malaise, low-grade fever, cough and occasional hemoptysis. However, the majority of patients remain asymptomatic. Our patient complained of a chronic cough, the significance of which is not known since she was a chronic smoker.³

Although there have been numerous case reports of human pulmonary dirofilariasis in the literature, no previous case has been reported in Iowa to our knowledge. Our patient denied any out-of-state travel and appeared to have acquired it in Iowa. She had been an avid golfer and admitted numerous mosquito bites.

In conclusion, we believe the case discussed here represents the first reported case

of human dirofilariasis in Iowa. Dirofilariasis should be included in the differential diagnosis of pleural-based peripheral lung mass densities.^{9, 10}

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Marion E. Alberts, M.D.

The Editor Comments



Stages

THE YEARS THAT PASS in the professional life of the physician can be divided into segments. The earliest is the formative years during which the future physician develops the desire and begins medical education. Marti-Ibañez, late professor of medical history at New York Medical College, referred to young professionals as "the young princes." Before the eighteenth century the medical profession had little social stature and the medical student aroused much social antagonism. In the Middle Ages, medical students lived in a social state not much better than that of a common beggar. Those who had no funds resorted to begging and stealing. Often they were the terrors of the town, but their devotion to learning medicine meant long hours listening to learned discourses from such as Albertus Magnus or Arnold of Villanova. They might stand for hours in a cold, dismal hall or a public square so their desire for knowledge was fed. At night by candlelight they studied in a cold, dark, gloomy cubbyhole that served as their home.

The climate of medical education and the social status of the profession improved after the beginning of the eighteenth century. Every student will derive the knowledge he desires by whatever means is at hand. Today the students without financial means may go deeply in debt to pay the tuition and living expenses. Some of us worked at menial jobs to pay the bills. During my medical school years some students were in programs sponsored by the military. However it may come about, the

medical student eventually attains the coveted medical degree and can embark in further training to learn the skills needed to become a specialist in general or family practice or another field. Eventually the time comes to enter active practice of medicine. Give or take a few years, by the time the physician reaches the age of 35 years the practice has become established. This brings us to the second phase in the professional life.

Borrowing again from the writings of Marti-Ibañez, the young physician, as well as the older one, has 3 responsibilities: that of a professional person, as a member of society and as a human being. The destiny of the young physician is a life of dedicated service and dynamic activity. The professional life of the physician is that of a healer and a preventer based on knowledge and organization. The knowledge attained in the years of formal study is organized in such a manner that the professional attributes are available to patients. This then means that the physician, as a member of society, renders service. Too often many physicians look upon service as that part of their practice from which financial gain is attained. However, service to society renders dignity and satisfaction to the individual. Too many young people have not enjoyed this satisfaction. The "yuppy" sector of our society has been criticized for their "what's in it for me?" attitude or their desire for material gain.

The younger physician has a responsibility to himself as a human being. He or she must have an ideal profile of self and live to be worthy of it. One's actions must be concomitant preservation of personal modesty and

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humility. Greatness has been described as grandeur in the things we do and simplicity in the way we do them. This can be the charge to the young physician of today; then he can feel satisfaction as he enters the third segment of professional life. This comprises the later years of practice, when maturity in thought and deed prevails, sometimes leading to the final segment of retirement. All do not elect the fourth segment and that is not to be condemned, for in all professions there are those who remain alert and astute in their advanced years.

To young physicians we dedicate this issue of *IOWA MEDICINE*. To them the legacy of medicine shall be a great responsibility. To allude to Mark 4:24 "The measure you give is the measure you will receive, with something more besides." — M.E.A.

Retirement — Second Verse

SEVERAL YEARS AGO I WROTE about retirement (J. Iowa Med. Society, May 1979). I discussed why some retire and how retired folk utilize their remaining allocated hours, days and years. My final statement was "For some, retirement can be enjoyed and tolerated early; for others, never. Time will tell regarding my ultimate decision."

Ten years later, after 35 years of practice (all but 6 years as a solo pediatrician) I have made that decision. On May 1, 1988 I retired from medical practice. Some readers may recall another editorial I called "Burn-out" a "Cop-out?" (J. Iowa Med. Society, October 1981). One of my statements was "Perhaps as we age we can more easily demonstrate that genius consists of the power to apply the originality of youth to the appearance of maturity." I do not view retirement as a "burn-out" nor a "cop-out." I view it as a reward, a gift for what I consider a job well-done. I now can reap the reward of contentment, relief from stress and increased enjoyment of this good earth.

The most common question I've heard since making the decision to retire has been whether I'm "planning to travel a lot." Next in frequency has been whether I have plans

to leave Iowa for the warm climates of the South or Southwest. My answer to both has been "No." I plan to keep my contact with medicine by continuing to serve as scientific editor of *IOWA MEDICINE*, avail myself to medicine in a non-practicing role and enjoy my home and garden life. The children and grand-

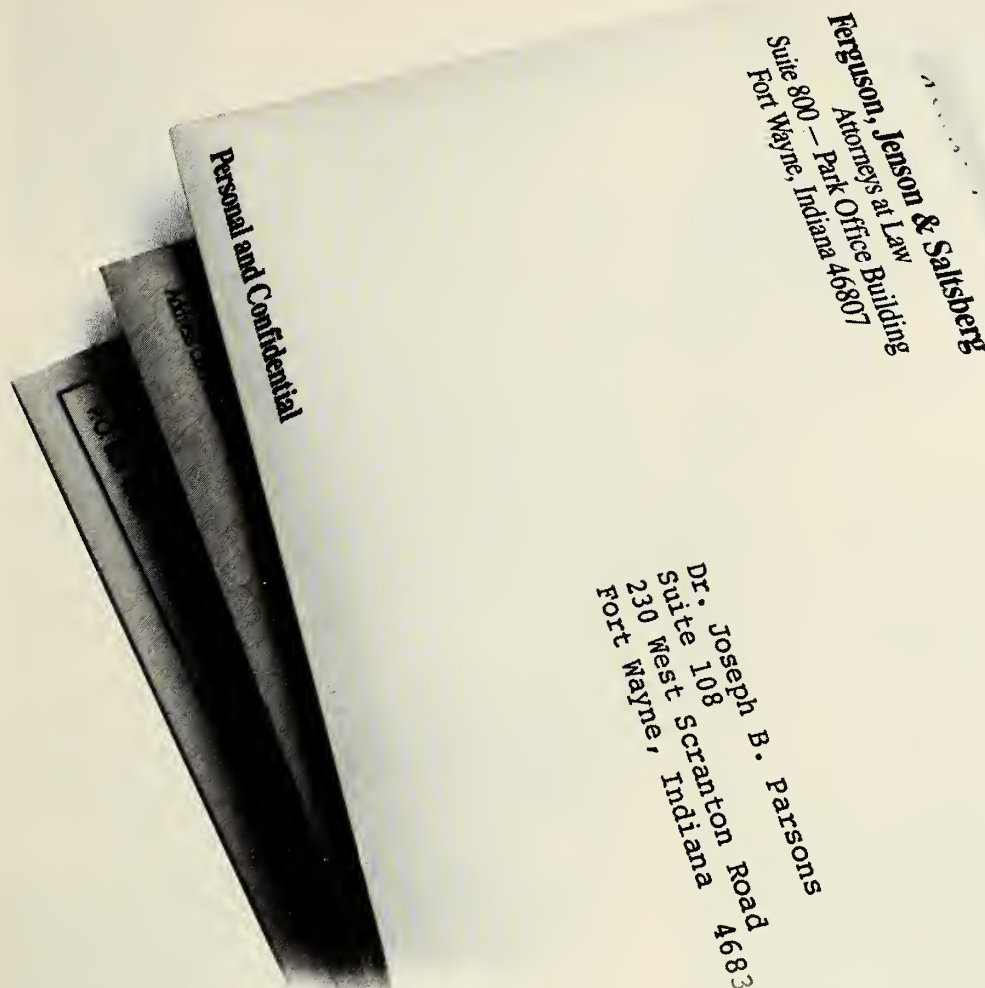
"But, I shall not withdraw from medicine. I am still a physician — a pediatrician — but in a different role."

children may demand more of my time. I shudder to think of the many hours I have cheated my children because the practice came first. No longer will that be an excuse.

I am grateful to many for the opportunity I had to practice medicine. Foremost, in my formative years my parents and teachers were a constant source of encouragement. I had the opportunity to marry a fine girl who worked so I could attend medical school and was a source of livelihood and moral support through intern and residency years. Time out from studies for both World War II and the Korean Conflict at the time seemed a terrible blow, but the experience was worth it. Thirty-five years of practicing pediatrics has been rewarding. The children I have served are a joy to me . . . many now in various professions, numerous ones in medicine. To look back on the changes in the art of medicine since entering medical college in 1944 conjures only bewilderment and amazement. But all the developments and changes are another story.

Retirement is defined in several ways — a state of withdrawal; a secluded condition; privacy. Certainly I shall not seek a secluded position. I do not intend to be withdrawn. Certainly I shall enjoy some privacy, but as for total withdrawal — no way. I am withdrawing from the active practice of medicine. I shall no longer have to answer the call of need for medical care. I can withdraw from the business of medicine and the ramifications it holds. But, I shall not withdraw from medicine. I am still a physician — a pediatrician — but in a different role. Instead of chasing germs and the uncertainties of life, I hope I can control those darn aphids on my roses. — M.E.A.

Crisis in black and white.



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CME Notebook



A Film Badge to Measure Compassion

GROWING OLDER. Waking earlier. Displeasure. Much displeasure. But sometimes something else . . . reading, assimilating, reflecting, pondering, ruminating, meditating, and to use a word that is the most mundane of all, yet as mysterious as any — thinking.

What can be the meaning of “the doctor-patient relationship” in an age when “science” holds power over so many medical minds, minds that misunderstand “medical practice” to mean only “medical science,” which so largely involves numbers, quantification, measurement. Others have observed that the academic *quadrivium* of the middle ages (disciplines devoted to measurement) have taken dominance over the *trivium* (disciplines devoted to words and interpretation) in medical education and practice. One consequence is that our scientific curiosity explores with measuring devices the nature of biological *disease*, at the expense of understanding *illness* (which might be defined as the disease plus the psychological and sociological phenomena attendant upon it — such as pain, suffering, anguish, adjustment, rehabilitation — the distinction roughly, between the “Biomedical Model” of disease and the “Biopsychosocial Model”).

These thoughts bring a memory from my past. When I entered college at Iowa State,

someone thought I couldn’t possibly do without the 13th edition of *The Handbook of Chemistry and Physics*, and bestowed it on me. That person was utterly mistaken, but my point is this: when I glanced at the table of contents, I saw that one of the headings was “Tables of Menstruation.” Being a naive adolescent with prurient inclinations, I turned to the section immediately only to find such tables as would inform me, for example, that 1 inch = 2.54 cm. I re-checked the spelling repeatedly, almost annually until menstruation no longer excited my prurient interests, and always verified that indeed, an outrageous typo for mensuration had crept into one of the world’s most prim and stuffy volumes of no-nonsense.

So what? Here’s what. The hard sciences to which medical science aspires, when being their most thoroughgoing and mensurationally, reproducibly precise, do not know how to measure such phenomena as friendship, loyalty, justice, concern, kindness, compassion. It therefore ignores them, which may be acceptable or even necessary for medical *science*, but is intolerable for medical *practice* (or medical education). That such ignoring has grown like Topsy in both medical practice and medical education is at the heart of much festering modern criticism of the profession.

How can this gap be bridged or error be corrected? The answer is so obvious. Why has it not been thought of? One needs only to invent a small device, looking perhaps like a radiologic film badge, to be worn by all physicians and other health care personnel. It would contain within it a sensitive indicator substance that increases its density of color in

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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proportion to the amount of sensitivity, compassion, and so on, that passes outward from the wearer. With such a device we could measure what we care about but lament loudly that we can't measure. We (some of us) thus conclude it isn't scientific and therefore remains unworthy of our attempts at study or instruction. What a wonderful device it would be for medical teachers and for those who do the hiring and firing for "managed health care systems." And for patients! All this presumes, of course, that excellence and competence have been assured already in what we now consider the knowledge and *scientific* matters that deal with *disease* (disturbed organs and chemicals).

But, you may ask, how can such a thing be — have I really invented such a marvel? Of course, I respond. And stand back out of my way. When I'm on a roll, no challenge is too great. Space precludes my providing details here, but watch this column next month where I'll disclose full details and also reveal my plans and drawings of the first fully operational sky-hook.

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Practice Management

Service Coding: The RVS Method

THE RELATIVE VALUES (RVS) METHOD is useful in managing your practice and pricing services. Unit values are assigned to CPT-4 codes to categorize medical procedures according to time, skill, severity and risk. *Relative Values for Physicians*, Second Edition, published by McGraw-Hill describes the process.

RVS definitions are set forth in concise matrix form. An approximate time is recommended. For example, CPT-4 Code 90050 Limited Service, Established Patient, 20 minutes. Code 90240 Hospital visit, Established Patient, Limited, is described as "characteristic of the usual hospital visit." Physicians frequently use the brief level to code routine office, hospital and ECF visits when they could use the limited level and claim the higher fee.

RVS states only the physician or laboratory obtaining a specimen should document collection and handling, noting a charge can be made for the service. CPT-4 assigns codes 9900X for this purpose. Also, RVS defines the CPT-4 new patient as "one who has not been seen by the physician for over 3 years."

Administrative Service (99XXX) codes are very useful. They may be used to document telephone calls for consultation or medical management. There are codes for office services on an emergency basis and for services provided after office hours, Sundays and holidays and in a location preferred by the patient. 99070 is used to code supplies and materials you furnish. Codes are available to document medical testimony, educational services and special reports. Prolonged services and various levels of critical care are also assigned definitions and codes.

ICD-9-CM, CPT-4 and the RVS seemingly cover all circumstances. Your goal is to code at a level of precision and sophistication that most accurately documents patient care. This allows for the appropriate charge. However, the market must be considered when determining charges. For example, it is appropriate to code telephone consultations since these entries appear on statements, insurance claims and management reports. This tells patients and underwriters services were rendered. Should there be a charge or not? That depends on community norm, competition and patient perception. For additional thoughts, see "Market Dynamics and the Pricing Process" in the February, 1988 *IOWA MEDICINE*.

One employee should supervise service coding, usually the person handling third-party claims. Responsibilities include overseeing code usage and assigning appropriate codes for the circumstances. The employee should review questionable situations with the doctor. The employee should attend training sessions offered by various associations and third-parties.

Excellent management tools are annual reports of procedures performed and diagnoses applied. The automated business system should be programmed to provide these reports in descending order of use frequency. Total charges according to each procedure and diagnostic code in descending order of magnitude should also be obtained. These reports profile the practice and tell you and your advisors, for example, procedures and diagnoses that contribute the most revenue. Perhaps so few EKGs are done that the best decision is not to replace an aging machine. On the other hand, diagnosis of a certain disease may appear often enough to justify purchase of laboratory technology to capture that revenue.

Service coding affects your practice and revenue. Coding must be mastered and exploited. A high degree of coding precision and sophistication can enhance revenues.

Material for this column is furnished by McGladrey, Hendrickson and Pullen, Des Moines.

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Drug Therapy Review

JOHN E. KASIK, M.D., Editor

Vancomycin: Specialized Niche for a Narrow-spectrum Antibiotic

VANCOMYCIN, ITS NAME DERIVED from the word *vanquish*, was introduced in 1956 for treatment of infections caused by penicillinase-producing staphylococci. After enjoying initial popularity, it was largely replaced by the semisynthetic penicillins. However, the prominent role in nosocomial infections of staphylococci resistant to semisynthetic penicillins and cephalosporins has resulted in dramatic increases in vancomycin utilization over the last decade.^{1, 4}

Mechanism of Action

Vancomycin, a complex glycopolypeptide unrelated to other major classes of antibiotics, binds tightly to peptides containing D-alanyl-D-alanine such as peptidoglycan, a major cell wall component of gram-positive bacteria. This results in steric hindrance of the enzyme peptidoglycan synthetase, thereby inhibiting bacterial cell wall biosynthesis. This is the major mechanism by which vancomycin exerts its bactericidal effects, although other contributory factors include inhibition of RNA synthesis and alteration of cell membrane permeability.^{2, 3, 9, 10}

Spectrum of Activity

Vancomycin's efficacy is limited almost exclusively to gram-positive organisms.^{1, 4, 9, 10} It is active against coagulase-negative and coagulase-positive (i.e., *S. Aureus*) staphylococci including those resistant to methicillin and

against streptococci including multiple resistant *S. pneumoniae*. However, it is only bacteriostatic against enterococci and some species of viridans streptococci. Few streptococcal strains are resistant. Corynebacteria are generally sensitive including the multi-resistant JK strain. Most clostridia are sensitive, including *C. difficile*. Vancomycin also has activity against bacillus species, listeria, strains of lactobacillus (70%) and some strains of actinomyces.

Vancomycin and aminoglycosides exhibit synergistic activity against certain organisms. Such combinations are useful in treatment of serious enterococcal infections, in which gentamicin and vancomycin are synergistic in >90 percent of cases, viridans streptococcus endocarditis in patients allergic to penicillin and perhaps infections on prosthetic devices caused by coagulase-negative staphylococci. Synergy with rifampin is variable and must be individually assessed before use, since antagonistic effects have been detected with some strains. Interactions with semisynthetic penicillins or cephalosporins have not been studied in detail but no cross resistance or competition for binding is expected to occur because vancomycin acts at a different step in cell wall synthesis.

Development of resistance to vancomycin during treatment is exceedingly rare although stepwise resistance can be induced in vitro.⁸ There has been no increased prevalence of resistance to vancomycin during 30 years of use. Tolerance, generally defined as a ratio of minimum bactericidal to minimum inhibitory concentration exceeding 8, has occasionally been observed in strains of *S. aureus*.

Indications for Use

Vancomycin is the drug of choice for treatment of infections caused by methicillin-resistant staphylococci.^{1, 4} It is important to note that staphylococcal resistance to methicillin

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

implies resistance to other semisynthetic penicillins and to all cephalosporins. The prevalence of methicillin resistance varies with the hospital and the patient population. For *S. aureus* rates of methicillin resistance vary from 2 to 20% for most hospitals in this country. For coagulase-negative staphylococci methicillin resistance is the rule and should be assumed in most instances. A large proportion of prosthetic device-related infections (intravascular catheters, central nervous system shunts) are caused by coagulase-negative staphylococci and in these vancomycin is the drug of choice. Vancomycin, possibly in combination with gentamicin and/or rifampin, has been advocated for treatment of prosthetic valve endocarditis caused by coagulase-negative staphylococci.

Another indication for vancomycin use is a serious staphylococcal infection in a patient intolerant of penicillins or cephalosporins.^{1, 4} In this situation it is strongly preferred over clindamycin or other alternatives. Vancomycin is used in prophylaxis of infective endocarditis in patients allergic to penicillin and erythromycin and in patients with prosthetic valves. Vancomycin is used in combination with aminoglycosides in treatment of serious enterococcal and viridans streptococcal infections in patients allergic to penicillin. Orally administered vancomycin can be used in treatment of antibiotic-associated colitis secondary to *C. difficile*, although less expensive alternatives (e.g., bacitracin and metronidazole) are available.

Vancomycin is often considered as part of the initial empiric therapy in the febrile patient with severe neutropenia. A recent study in this patient population demonstrated similar morbidity and mortality from gram-positive infections whether vancomycin was started empirically or only after microbiologic documentation.⁷ These data suggest that in the absence of a specific indicator of resistant gram-positive infection (e.g., institutional outbreak and/or infected intravascular device), one could select alternative agents and change to vancomycin only if warranted on the basis of culture results.

Pharmacokinetics and Dosing

Vancomycin is poorly absorbed from the gut and is not tolerated by the intramuscular

(Please turn to page 280)



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3. The use of potassium salts in patients receiving diuretics for uncompensated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: **Hyperkalemia**—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS**, **WARNINGS**, and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 mEq/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3. Correction of acidosis, if present, with intravenous sodium bicarbonate.

4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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route. It is given intravenously except in antibiotic-associated colitis when oral administration gives high luminal concentrations in the gut. It is excreted unchanged by the kidneys. The half life is 6 hours in the presence of normal renal function. Vancomycin is 55% protein bound and is not removed by either hemodialysis or peritoneal dialysis. It does not traverse normal meninges, but can cross inflamed meninges to a sufficient degree to be useful in central nervous system infections.

The usual dose in the presence of normal renal function is 500 mg every 6 hours or 1 g every 12 hours in adults or about 40 mg/kg/day in divided doses in children. Dosage nomograms are available to facilitate treatment of patients with deranged renal function.⁶ A simple formula can be used to estimate vancomycin dose following an initial loading dose of 15mg/kg: daily dose in mg = $15 \times \text{CrCl} + 150$. Alternatively, one may repeat standard doses of 8 mg/kg at longer intervals for decreased creatinine clearances (e.g., dosing intervals of approximately 12, 18 or 24 hours for



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clearances of 50, 35 or 20 ml/minute, respectively). The usual dosing interval for anephric patients is about 5 to 8 days. Treatment and potential toxicity are monitored by measuring drug levels. A peak of 30 to 40 µg/ml and trough of 5 to 10 µg/ml are considered appropriate. The oral dose for antibiotic-associated colitis is 125 mg every 6 hours. Because few data are available as to the safety of vancomycin during pregnancy, its use is not recommended unless there is no suitable alternative.

Side Effects

The major untoward effect of vancomycin is ototoxicity.⁵ This is generally related to peak serum concentrations exceeding 40 µg/ml and usually affects auditory rather than vestibular function. There is additive ototoxicity with that of the aminoglycosides. Nephrotoxicity with azotemia may also occur, but its incidence is lower now than with earlier less pure preparations. Thrombophlebitis at the site of the infusion is rather frequent. Allergic manifestations such as skin rash occur but are uncommon. An erythematous pruritic eruption that involves the face, neck and trunk, with or without hypotension, does occur com-

monly and is referred to as "red man" or "red neck" syndrome. It is related to the rate at which the drug is given and can usually be avoided by running the infusion at a slow rate over 1 to 2 hours. This reaction is thought to be mediated by nonimmunologic release of histamine. Another infusion-related side effect called the "pain and spasm syndrome" involves spasm in the parasternal muscles with throbbing pain that clears when the infusion of vancomycin is stopped. Neutropenia due to vancomycin has been observed on rare occasions.

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Iowa's County Health Planning Initiative Program

IOWA HAS TURNED ITS attention to a new way of addressing health problems. The county health planning initiative program teams community leadership with a systematic approach to health promotion and disease prevention in Iowa's 99 counties. The program is comprised of 3 basic planning strategies — getting decision makers together, getting them to talk about what is important and getting them to take action.

In the case of the county health planning initiative program, the important issue involved the role healthy lifestyles and positive health practices can play in preventing illness and reducing its burden. As Robert E. Windom, who heads the U.S. Public Health Service, has observed, "We could cut the health budget by a third or more, maybe half . . . if people would simply do the things that are known to prevent illness, injury, disability and premature death."

Regional Planning

Impetus for the program came from an administrative rule, effective January 1986, placing new responsibilities on county boards of health. These responsibilities included identifying public health problems and writing an action plan to respond to them. To assist the counties, the Iowa Department of Public Health (IDPH) began working with the Division of Assessment and Management Consultation in the Training and Laboratory Program Office at the Centers for Disease Control (CDC).

Within the department, the Office of Health Planning coordinated data needs and

built a technical assistance team, with members drawn from each division. Public health nurse supervisors were liaisons between the department and county boards of health by reporting on local efforts, arranging meetings and following up on needs and issues. At the outset, IDPH defined a health problem as a situation or condition which is considered undesirable and likely to cause death, disease or disability.

At 12 regional meetings in June 1987, county representatives and the IDPH technical assistance team members discussed their respective planning roles. The department agreed to develop a list of statewide health problems as a guide for county efforts. The department also agreed to provide counties with specific data on their health problems. And, after counties had identified at least one health priority, the technical assistance team would analyze the problem and work with the counties to develop appropriate intervention strategies. In turn, counties would submit an action plan to the department. At the meetings, county representatives called for additional technical assistance; they requested a needs assessment tool to take them through the planning process.

County Health Planning Committees

Following regional meetings, county boards of health began to organize health planning committees. Their membership varied from county to county, but represented a wide range of individuals and agencies concerned with health problems. These stakeholders often included elected officials, health care providers, human service agency representatives, school officials and other key community leaders.

In some counties, just bringing these groups together served an important function. As one county public health administrator observed, "Involving people from so many dif-

ferent areas has broadened our perception and increased our awareness of the needs of our community. It prevents duplication of services while allowing us to coordinate our various resources to serve our community."

At the same time, frustrations and other issues surfaced. According to the same county administrator, "As a health care provider, it has been a beneficial experience — however, it's also frustrating to meet with so many concerned individuals, agree upon needs, formulate interventions and yet not have the financial resources to carry them through."

Needs Assessment/Planning Tool

While counties organized local committees, the department's technical assistance team and CDC staff began drafting a needs assessment/planning tool and collecting

county-specific data. Morbidity data proved to be the most difficult to collect.

After many revisions, the tool that finally emerged contained 6 sections with accompanying county-specific data. Section I provided for such socio-demographic data as age groups, sex and race by county and state along with statements to guide discussion and data analysis. Prenatal, mortality, hospitalization and some national prevalence data were included for Section II, Health Problem Profile. The purpose of this section was to help committees identify leading causes of death and hospitalization as well as any unique health problem.

In Section III, Health Problem Priorities, committees could determine their health problem priorities for the next 5 years, regardless of available resources and the health problem or problems to be addressed in the coming year. After the committees selected the prior-


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ity problem, the technical assistance team members would prepare a health problem analysis.

On the advice of CDC staff, the team adopted a management system, problem analysis format that included a goal (operational and philosophical justification); outcome objective (projected future level of the health problem); impact objective (projected future level of a direct determinant); process objective (projected future level of a contributing factor); and activities (actual tasks performed by program personnel). This analysis in Section IV served as a basis for committee selection of activities. The last 2 sections tied available resources and resource needs to the selected health priorities.

After consulting with public health nurse supervisors, the technical assistance team selected 7 counties for pilot testing the tool. In

making the selection, the team considered the counties' diversity, their willingness to act as test counties and their location within each of Iowa's 6 public health nursing regions. In advance of the pilot testing, the department invited representatives from the pilot counties to participate in a trial run of the tool, using data from one pilot county. The department also developed a list of statewide priority health problems, another step in preparing for the pilot tests. To assess overall significance of health problems, the department's division directors and bureau chiefs analyzed the magnitude of the problem, mortality, associated hospitalization and preventability.

Currently, the pilot tests are underway. Following an evaluation of the tests and revisions in the needs assessment tool, the technical assistance team will introduce the tool

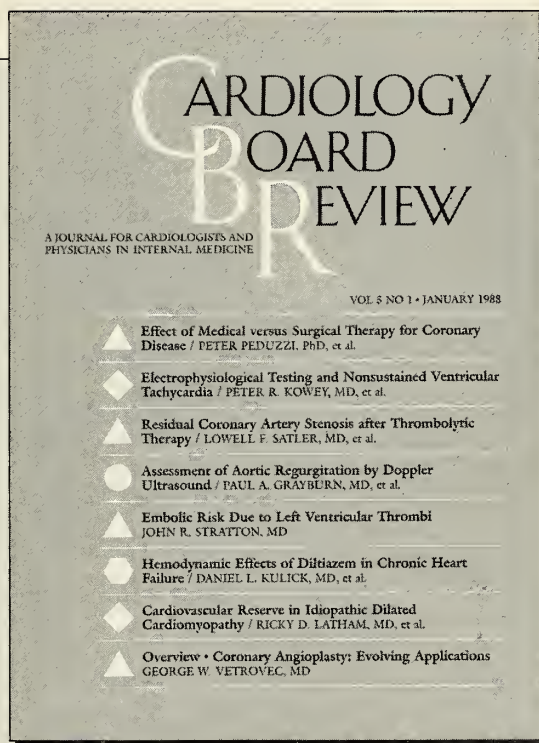
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and process in the remaining counties. Regional meetings will be scheduled in late summer and early fall.

Short and Long Term Benefits

The county health planning initiative program has already produced results. For example, some county committees have not waited for a needs assessment/planning tool but have conducted health-related surveys, started prevention projects, printed resource guides, improved referral activities and begun networking. Within the department, the program has served as a catalyst for staff interaction across divisions, enhancing cohesion and elan.

The department has collected county-specific data, made it available to the counties and issued a county health planning initiative newsletter. Department personnel members now are more aware of the kinds of information available outside their own divisions, as well as gaps in information.

In the future, the county-specific, baseline data can be used to evaluate effectiveness of a county's intervention strategies. The program also has the potential to help develop a clearer vision among key decision makers about what can be done to harness health care resources to priority problems. As Marcel Proust has decribed it. "The real voyage is not seeing new lands, but seeing with new eyes."

April 1988 Morbidity Report

Disease	Apr. 1988 Total	1988 to Date	1987 to Date	Most Apr. Cases Reported From These Counties	Disease	Apr. 1988 Total	1988 to Date	1987 to Date	Most Apr. Cases Reported From These Counties
AIDS	5	12	11	NA	Legionellosis	0	4	5	
Amebiasis	0	2	10		Malaria	0	0	0	
Brucellosis	0	1	2		Meningitis				
Chickenpox	1513	4830	5100	Scattered	aseptic	2	13	8	Benton, Scott
Campylobacter	28	77	55	Scattered	bacterial	10	45	25	Scattered
Cytomegalovirus	3	4	7	Johnson, Lee, Scott	meningococcal	0	0	3	
Eatons Agent					Mumps	2	26	180	Black Hawk, Wayne
Infection	4	21	30	Davis, Polk, Scott	Pertussis	0	15	3	
Encephalitis, viral	1	7	1	Harrison	Rabies in animals	25	53	97	Scattered
Erythema					Reye Syndrome	0	0	0	
Infectiosum	30	58	569	Scattered	Rheumatic Fever	0	0	0	
Gastroenteritis					Rubella				
(GIV)	2317	10421	8422	Scattered	(German				
Giardiasis	34	108	81	Scattered	measles)	0	0	1	
Hepatitis, A	8	26	53	Black Hawk, Lee, Scott, Woodbury, Wright	Measles	0	0	0	
Hepatitis, B	10	32	47	Black Hawk, Lee, Scott, Woodbury, Wright	Salmonellosis	6	16	37	Polk, Scott, Sioux, Washington, Winnebago
Hepatitis, Non					Shigellosis	29	72	8	Scattered
A-B	2	6	10	Calhoun, Dubuque	Toxic Shock				
Hepatitis					Syndrome	0	2	2	
type unspecified	0	1	2		Tuberculosis				
Herpes Simplex	100	354	374	Scattered	total ill	1	14	8	Polk
Herpes Zoster	0	0	1		bact. pos.	1	10	8	Polk
Histoplasmosis	1	4	6	Carroll	Typhoid Fever	0	0	0	
Infectious					Venereal diseases				
mononucleosis	21	58	99	Scattered	Gonorrhea	254	650	958	Scattered
Influenza,					Chlamydia	484	1385	1108	Scattered
lab confirmed	21	104	66	Scattered	Syphilis	6	9	7	Buena Vista, Scott, Woodbury
Influenza-like									
illness (URI)	3333	21218	19740	Scattered					

Other Non-Reportable Diseases: Trichuris Trichiura — 1, Polk;
Ureaplasma Urealyticum — 3, Johnson; 1, Mahaska.

About Iowa Physicians

Dr. Bonnie J. Premo has joined the North Medical Center Clinic in Davenport. Dr. Premo received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and completed her residency through Mercy-St. Luke's hospital residence program in Davenport. Prior to joining the Medical Center Clinic, Dr. Premo was at the Durant Family Medical Facility. **Dr. Steven Phillips**, Des Moines, received the Governor's Science Award for scientific achievement at the 100th annual meeting of the Iowa Academy of Science in Ames. Dr. Phillips is chief heart transplant surgeon at Mercy Hospital Medical Center in Des Moines. **Drs. Michael Niehaus, Cesar Abiera, Jr., Michael Hendricks and John Lyday** have joined the staff of Burlington Med-

ical Center. Dr. Niehaus is associated with Surgeons Inc. P.C. Dr. Abeira practices in LaHarpe and Dallas City, both in Illinois. Dr. Hendricks is associated with Orthopedic and Reconstructive Surgery Associates P.C. Dr. Lyday is with the Nu-Patch P.C. pathology group. **Dr. P. Scott Zimmerman** has joined the McCrary-Rost Clinic, P.C. in Rockwell City. Dr. Zimmerman received the M.D. degree from the U. of I. College of Medicine, completed his internship at the Marshfield Clinic in Marshfield, Wisconsin and practiced at the Rea Clinic in Christopher, Illinois. **Dr. Sandra Emas** has begun family practice at the Family Medical Center in Pleasantville. Dr. Emas received the D.O. degree at the University of Osteopathic

(Please turn to page 288)



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Medicine and Health Sciences and served her residency at Methodist's Blank Children's Hospital, both in Des Moines.

Deaths

Dr. Nelle Schultz, 81, Humboldt, died March 18 at Humboldt County Memorial Hospital. Dr. Schultz received the M.D. degree from the U. of I. College of Medicine and practiced medicine in Humboldt from 1932 until her retirement in 1969. She was a member of the Alpha Omega Alpha honorary medical society.

Dr. Homer John Gilfillan, 76, Bloomfield, died April 9 at Davis County Hospital in Bloomfield. Dr. Gilfillan received the M.D. degree at the U. of I. College of Medicine and served his internship and residency at Henry Ford Hospital in Detroit, Michigan. He was head of the Quincy Clinic Department of Ophthalmology in Quincy, Illinois and served as an officer in

the U.S. Medical Corps. Dr. Gilfillan co-founded the Gifillan Clinic in 1946 and practiced until his retirement in 1985. He was a member of the American Academy of Ophthalmology and Otolaryngology.

Dr. Roland B. Morrison, 80, Carroll, died March 24 at Carroll Health Center. Dr. Morrison received the M.D. degree from the U. of I. College of Medicine. He practiced medicine in Carroll from 1933 until his retirement in 1976. Dr. Morrison was a railroad physician and surgeon as well as a Carroll County medical examiner.

Dr. Harold E. Sauer, 69, Marshalltown, died April 9 at his home. Dr. Sauer received the M.D. degree from the U. of I. College of Medicine and completed his residency at Iowa Methodist Medical Center, Des Moines. He was in private family practice until he retired in 1985. Dr. Sauer was Marshall County medical examiner for more than 30 years and was a member of the American Academy of Family Practice.

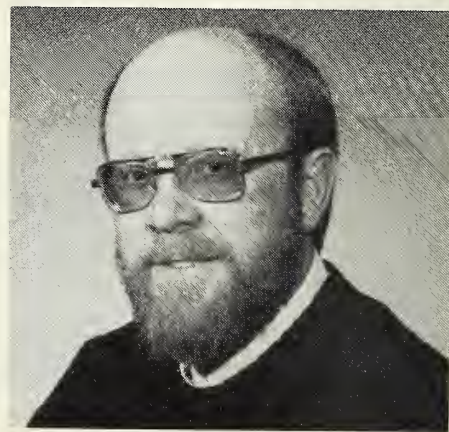
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WHAT ORGANIZATION OFFERS financial assistance to Iowa medical students and also supports a significant number of educational and scientific activities for practicing physicians and the public?

The answer is the *Iowa Medical Foundation*, a special component of organized medicine in Iowa engaged in ongoing activities which makes it highly worthy of periodic recognition. Created in the 1950's, the sole purpose of the Iowa Medical Foundation is helping Iowans in ways that have become increasingly diversified in recent years.

Helping Future Physicians

The major activity of the Iowa Medical Foundation continues to be the Dr. George Scanlon Medical Student Loan Fund, which provides financial aid to Iowans training to be physicians. This Foundation activity has taken on more significance in recent years due to federal funding cutbacks and the increased cost of medical education.

Since the program's inception, loans have been made to 580 Iowa medical students. Those loans total \$1.5 million. Over \$1 million of this amount has been loaned in the last 15 years.

In the 1987-88 academic year, loans totaling over \$100,000 were made to 30 Iowa students. These students came from 21 different Iowa communities. For the 1988-89 academic year, the Foundation Board of Directors has allocated \$150,000 for student loans; \$125,000 of this will go to students attending the University of Iowa College of Medicine.

Foundation loans are available up to \$5,000 per year for junior and senior medical students with Iowa ties.

Beneficial Projects

In addition to student loans, the Foundation is involved in or supports a number of

programs and activities beneficial to medicine and the health of Iowans. For many years, the Foundation has been a key supporter of the Hawkeye Science Fair for junior and senior high students across Iowa. The Foundation also continues its involvement in the Iowa Coalition for Comprehensive School Health Education, which sponsors an annual health education conference for Iowa educators. The "Healthy Mothers/Healthy Babies" coalition in Iowa has also received Foundation support.

This past year, the Foundation helped underwrite the cost of video presentations regarding child abuse and traumatic injuries caused by drug/alcohol abuse. The videos will be used to help educate both physicians and the public. The Foundation also helps support the IMS Assistance Program for Troubled Physicians.

Thanks To Iowa Physicians

The main source of support for the Foundation's worthy activities is Iowa's practicing physicians. Over the past 14 years, the Foundation has received average contributions of \$28,000 per year. Almost all of these contributions have come from physicians.

In 1987, 724 physicians contributed \$25,340 to the Foundation. The money was received from the \$35 voluntary contribution option provided on the Iowa Medical Society dues statement.

The Iowa Medical Foundation is an organization of which Iowa physicians can be proud. Physicians who have supported Foundation activities through the years deserve a pat on the back for a job well done. Without their support, the Foundation would be unable to undertake so many worthwhile projects.

June 1988

Iowa Medicine

Daniel M. Youngblade

President's Privilege



Two Vital Issues

AS WE ALL KNOW, IMS activity in the legislative arena does not end with the adjournment of the General Assembly each year.

In late June, the IMS Task Force on Medical Liability and the IMS Committee on Legislation met to begin forming new strategy for our legislative program this fall and map out goals for the future. Now is the time for all IMS physicians to speak with their delegates, councilors or other IMS leaders regarding suggestions for legislative goals and how those goals can be obtained.

Though the effort put forth by physicians serving on the task force and the legislative committee is vital, it will not stand alone. I would like to remind physicians across Iowa of the importance of local legislative activity. I strongly urge physicians to begin "at home" contacts with legislators. Get to know your legislator. Begin building an atmosphere of confidence and support which is conducive to a meaningful discussion of the issues.

Remember, as a physician you have daily contact with many patients in your office and the hospital. Each one of these contacts is an opportunity to discuss adverse changes in delivery of health care — changes such as the liability crisis and third party intrusion in the physician/patient relationship. These daily contacts can be an important component in our legislative efforts.

Legislative considerations aside, there is another issue on the horizon which may put

organized medicine to a test. The Harvard Relative Value Scale, which could become the basis for the way Medicare pays physicians, is scheduled to be released soon. Some AMA officials are warning the RVS could have a splintering effect on organized medicine as some specialties try to protect themselves by striking out on their own.

Dr. James Davis, president-elect of the AMA, says there must be a united effort to represent all the interests of medicine to Congress. "Washington is all too willing to drive wedges between one physician group and another, especially if we provide the wedges and create the cracks where those wedges can be inserted," he comments.

Dr. Davis cautions all physicians to be aware of and resist the trend toward disunity because of the harm it can do to our profession and the quality of health care in America. I urge all my colleagues to heed his advice.

A handwritten signature in dark ink that reads "Daniel M. Youngblade M.D." The signature is written in a cursive, flowing style.

Daniel M. Youngblade, M.D.
President

One Number

David E. Abisror, M.D. • Anil K. Agarwal, M.D. • Robert J. Anderson, M.D. • R. V. Andrews, M.D. • Vito A. Angelillo, M.D. • Dean F. Arkfeld, M.D. • Eugene J. Barone, M.D. • Richard G. Belatti Jr., M.D. • Donald R. Bennett, M.D. • Chhanda Bewtra, M.D. • Martin H. Bierman, M.D. • Marvin J. Bittner, M.D. • Joel N. Bleicher, M.D. • Patrick J. Bogard, M.D. • Richard W. Booth, M.D. • Patrick W. Bowman, M.D. • Alfred W. Brody, M.D. • Patrick E. Brookhouser, M.D. • John H. Brush, M.D. • Walter A. Brzezinski, M.D. • Steven S. Butt, M.D. • Clayton J. Campbell, M.D. • James T. Cassidy, M.D. • Methven D. Cathro, M.D. • Mieczyslaw M. Cegielski, M.D. • David H. Chait, M.D. • Steven A. Chartrand, M.D. • Mark D. Christensen, M.D. • Terrence F. Ciurej, M.D. • George O. Clifford, M.D. • John F. Connolly, M.D. • P. James Connor, M.D. • Kevin P. Corley, M.D. • Robert S. Cox Jr., M.D. • Carl H. Dahl, M.D. • James W. Daly, M.D. • Helen-Sinh T. B. Dang, M.D. • H. Jeoffrey Deeths, M.D. • Peter R. DeMarco, M.D. • Tom R. DeMeester, M.D. • Euclid R. J. DeSouza, M.B.B.S. • Meera N. Dewan, M.D. • Naresh A. Dewan, M.D. • Mark J. Diercks, M.D. • Carol A. Drake, M.D. • David L. Dworzack, M.D. • John F. Edland, M.D. • John J. Edney, M.D. • Dennis J. Esterbrooks, M.D. • Robert J. Fagnant, M.D. • Robert G. Faier, M.D. • Rose F. Faithe, M.D. • James J. Faylor, M.D. • Richard J. Feldhaus, M.D. • John J. Ferry, M.D. • Robert J. Fitzgibbons Jr., M.D. • Robert J. Fitzgibbons Sr., M.D. • Timothy C. Fitzgibbons, M.D. • William P. Fitzgibbons, M.D. • Francis M. Fitzmaurice, M.D. • Thomas S. Forrest, M.D. • Mathis P. Frick, M.D. • Alan H. Fruin, M.D. • Ramon M. Fusaro, M.D. • Ray D. Gaines, M.D. • J. Christopher Gallagher, M.D. • Robyn Gembol, M.D. • Dipti Ghoshal, M.D. • Ellen E. Golden, M.D. • Paul D. Goodrich, M.D. • John L. Gordon, M.D. • Peter M. Gordon, M.D. • R. Michael Gross, M.D. • Michael L. Grush, M.D. • Jud W. Gurney, M.D. • Michael J. Haller, M.D. • Michael D. Hammeke, M.D. • Thomas T. Hee, M.D. • John J. Heieck, M.D. • Mary H. Heintz, M.D. • Jerrad J. Hertzler, M.D. • Washington C. Hill, M.D. • Bruce A. Holcomb, M.D. • Joseph M. Holthaus, M.D. • Pum-Hi Hong, M.D. • Russell J. Hopp, D.O. • Michael J. Horn, M.D. • Edward A. Horowitz, M.D. • Mark B. Horton, M.D. • Robert M. Howell, M.D. • William J. Hunter, M.D. • John A. Hurley, M.D. • Harry J. Jenkins, M.D. • James F. Johnson, M.D. • O. Kenneth Johnson, M.D. • Paul S. Johnson, M.D. • Warren T. Kable, M.D. • David A. Katz, M.D. • J. Whitney Kelley, M.D. • Charles M. Kelly, M.D. • Jay G. Kenik, M.D. • Jai K. Koh, M.D. • Bernard L. Kratochvil, M.D. • Harold J. Kuehn, M.D. • Sandra J. Landmark, M.D. • Clayton A. Lang, M.D. • Stephen J. Lanspa, M.D. • Mary B. Laya, M.D. • Arnold W. Lempka, M.D. • Gernon A. Longo, M.D. • Robert J. Luby, M.D. • Henry T. Lynch, M.D. • Joseph D. Lynch, M.D. • James A. Mailliard, M.D. • James L. Manion, M.D. • George D. Maragos, M.D. • M. Frederick Marsh, M.D. • John J. McCarthy, M.D. • John O. McCarthy, M.D. • George A. McClellan, M.D. • James E. McGill, M.D. • Matilda S. McIntire, M.D. • Patrick J. McKenna, M.D. • John F. McLeay, M.D. • Satish K. Mediratta, M.D. • Samuel H. Mehr, M.D. • Syed M. Mohiuddin, M.D. • Gilles R. G. Monif, M.D. • Iris J. Moore, M.D. • Aryan N. Mooss, M.D. • Michael J. Morrison, M.D. • Kirk B. Muffly, M.D. • Patrick Mulligan, D.D.S. • Richard P. Murphy, M.D. • Kevin D. Nohner, M.D. • Walter J. O'Donohue Jr., M.D. • James P. O'Hara, M.D. • James V. Ortman, M.D. • Donald J. Pavelka, M.D. • Dwaine J. Peetz Jr., M.D. • Fred J. Pettid, M.D. • Howard F. Poepsel, M.D. • Jeffrey C. Popp, M.D. • Thomas J. Poulton, M.D. • Laurel C. Preheim, M.D. • Ira A. Priluck, M.D. • Thomas S. Pruse, M.D. • Mary P. Pugsley, M.D. • Robert R. Recker, M.D. • Marc S. Rendell, M.D. • Allan M. Rubin, M.D. • Vincent Runco, M.D. • Charles T. Rush, M.D. • Jose A. Saporta, M.D. • Mary A. Schermann, M.D. • Edward M. Schima, M.D. • William J. Schlueter, M.D. • Judith S. Schreiman, M.D. • Richard D. Schultz, M.D. • Michael H. Sketch, M.D. • Patrick A. Smith, M.D. • Thomas C. Smyrk, M.D. • Gamini Soori, M.D. • Janet S. Soori, M.D. • James F. Stanosheck, M.D. • Andrea J. Steenson, M.D. • Paul E. Steffes, M.D. • Robert E. Steg, M.D. • Brent V. Stromberg, M.D. • Jeffrey T. Sugimoto, M.D. • Charles Taylor, M.D. • Alan G. Thorson, M.D. • Robert G. Townley, M.D. • Louis F. Tribulato, M.D. • Robert N. Troia, M.D. • Sebastian J. Troia, M.D. • Chang-Yong Tsao, M.D. • John A. Ursick, M.D. • Donald M. Uzendoski, M.D. • Jalleh Vafai, M.D. • Kathleen E. Wilken, M.D. • Michael D. Wilmont, M.D. • Mark P. Woodruff, M.D. • Jack R. Zastera, M.D. • Ziad L. Zawaideh, M.D. • Cecile M. Zielinski, M.D.

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Presidents' Messages

DENNIS J. WALTER, M.D.

Des Moines, Iowa

DANIEL M. YOUNGBLADE, M.D.

Sioux City, Iowa

In remarks to the 1988 IMS House of Delegates, retiring IMS President Dennis J. Walter, M.D., discussed the philosophy by which he lives and practices medicine. Incoming president Daniel M. Youngblade, M.D. spoke of medicine changing so rapidly physicians could easily lose sight of the reasons they chose to become physicians.

With Love

I'M TOLD THE PRESIDENT'S ADDRESS should be an accounting of my stewardship — a summing up of what I've done the past year. I did that, and what I ended up with was a very short list. I do have something else I'd like to say.

We'll talk about the heavy subjects this afternoon. Right now, I want you to relax and think about other things.

Doctors have a special calling, a mission to be helpers and healers, to be with patients in their happiness and stand with them in sorrow.

Our mission is not to see how much

money we can make, and our worth is not a dollar figure on a financial statement.

What's the rush, the hurry to get from here to there? I'd like to share an article with you, one I've quoted from before. It's called "The Station" by Robert J. Hastings.

Tucked away in our subconscious minds is an idyllic vision. We see ourselves on a long, long trip that almost spans the continent.

We're traveling by passenger train and out the windows we drink in the passing scene of cars on nearby highways, of children waving at a crossing, cattle grazing on a distant hillside, of smoke pouring from a power plant, of row upon row of corn and wheat, of flatlands and valleys, of mountains and rolling hillsides, of city skylines and village halls, of biting winter and blazing summer and cavorting spring and docile fall.

But uppermost in our minds is the final destination. On a certain day at a certain hour we will pull into the station. There will be bands playing and flags flying. And once we get there so many wonderful dreams will come true.

So many wishes will be fulfilled and so many pieces of our lives finally will come

neatly together like a completed jigsaw puzzle. How restlessly we pace the aisles, damning the minutes for loitering . . . waiting for the station.

But, sooner or later we must realize there is no one station, no one place to arrive at once and for all. The true joy of life is the trip. The station is only a dream. It constantly outdistances us.

"When we reach the station, that will be it!" we say. Translated, it means, "When I'm 18, that will be it! When I buy a new 450 SL Mercedes-Benz, that will be it! When I put the last kid through college, that will be it!"

"When I have paid off the mortgage, when I win a promotion, when I reach the age of retirement, that will be it! I'll live happily forever after!"

Unfortunately, once we get "it", then "it" disappears. The station somehow hides itself at the end of an endless track.

"Relish the moment" is a good motto. It isn't the burdens of today that drive us crazy. Rather it is regret over yesterday or fear of tomorrow. Regret and fear are twin thieves who would rob us of today.

So, stop pacing the aisles and counting the miles. Instead, climb more mountains, eat more ice cream, go barefoot oftener, swim more rivers, fish more often, watch more sunsets, sing more songs, laugh more and cry less. Life must be lived as we go along.

The station will come soon enough.

Well, I've given you the whole thing, and what I think is a good way of looking at life.

So you don't have a summing up of my stewardship, but I'd rather have you remember these ideas that I believe in and that will, in the long run, be what we are about as doctors and as human beings.

Thanks for letting me be your president.

Rekindling an Image

THOSE OF YOU WHO WERE unable to attend the Scientific Session this year missed an extremely interesting, informative and superb program. The session touched on a number of the issues we face in medicine today. You only have to look at your Scientific Session program to grasp the rapidly changing nature of medical practice today.

As the program demonstrates, we are seeing high tech activity in laboratory medicine, actuated and microchemical instrumentation, satellite microscopy, genetic screening and genetic manipulation by chemical and mechanical means, magnetic resonance imaging and lasers, just to touch on a few. In short, it's easy to see that the practice of medicine is changing drastically.

Add to these advances all the issues we dealt with in this year's reference committees — the intrusion of third party

payors, government agencies, regulatory bodies, etc. This only tells us once again that changes are happening continuously and probably more rapidly than any of us ever envisioned when we entered the practice of medicine.

In the midst of all this, I hope we don't forget some of the most important things that relate to the practice of medicine. I hope that all of us remember that the people of Iowa want and need physicians at all levels who still care and have personal concern for their individual patients. We have to find ways to rekindle and improve that image the public once knew and felt toward their doctors.

Take those extra moments. Show a genuine, caring way. Give a compassionate response to all of your patients. Establish or reestablish that faith, trust and love all of our patients want and expect from their physicians.

Would You Like To See One of YOUR Photos In IOWA MEDICINE?

The editors are officially on the lookout for photos taken by IMS member physicians for possible publication in IOWA MEDICINE. The photos will be used at the editors' discretion, with the best of the lot considered for publication on the cover of the magazine. Naturally, all physicians whose photos are used in IOWA MEDICINE will be given full editorial credit.

Photo subjects might include but are not limited to scenery, exotic places, interesting people and events or the world of medicine. Since the photos will be reproduced in black and white, black and white photos are the best. However, color is also acceptable if the contrast is good.

Simply send us any 8 x 10 photo (PLEASE include the negative) you think our readers might enjoy. Don't forget to include your name and a description of where and when the photo was taken. Feel free to submit more than one photo if you wish. The Publications Committee will judge the photos according to reader appeal, content or artistic/aesthetic value. You will be notified if your photo is chosen for publication. Photos and negatives will be returned on request.

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1988 House Sets Policy on Key Issues

Medicare reimbursement, AIDS and unified membership were among key issues receiving attention when physicians representing county medical societies across Iowa attended the 1988 House of Delegates April 23-24. Following is a summary of the House sessions and actions.

THE 1988 ANNUAL MEETING of the Iowa Medical Society House of Delegates was held April 23-24 in Des Moines. Sessions of the House were chaired by William Rosenfeld, M.D., Speaker. Open hearings were conducted by 3 reference committees on April 23. The Annual Banquet occurred April 23 and was chaired by President Dennis Walter, M.D.

At the banquet, Arthur Downing, M.D., received the 1988 IMS Merit Award. Dr. Downing, a retired Des Moines ophthalmologist, received the award in recognition of his outstanding contribution to the IMS and the medical profession.

April 23 Session

Registered for the April 23 session of the House were 178 delegates and 6 ex officio members. Minutes of the April 5, 1987 Annual Meeting session were approved as summarized in the July, 1987 issue of *IOWA MEDICINE*.

Reports contained in the 1988 Handbook for the House of Delegates were approved

with one exception. The report of the IMS Committee on Articles of Incorporation and Bylaws was referred to the Reference Committee on Reports of Officers and Articles of Incorporation and Bylaws.

Supplemental Reports

The following reports were made to the 1988 House of Delegates:

Board of Trustees, by Donald Rodawig, M.D., chairman. Included was an audio/video presentation on 'Medicare Partners,' the Society's new voluntary Medicare assignment program.

Judicial Council, by Robert Kent, M.D., chairman. Membership recruitment and retention was discussed.

Necrology, by Robert Kent, M.D., chairman, Judicial Council.

Nominating Committee, by Lawrence Goodman, M.D., chairman. The 1988 officer slate was read, with no further nominations from the floor.

Committee on Legislation, by Clarence Denser, Jr., M.D., chairman. The history of IMS efforts at liability reform was outlined. Possible legislation on mandatory Medicare assignment for Iowa physicians was discussed.

Iowa Medical Political Action Committee (IMPAC), by Jackson VerSteege, M.D., chairman.

Committee on Emergency Medical Services, by Michael Abrams, M.D., chairman. Delegates viewed an audio/visual presentation produced by the EMS committee on the dangers of chemically-induced trauma.

Iowa Medical Foundation, by Donald Rodawig, M.D., president, Foundation Board of Directors.

Iowa Physicians Mutual Insurance Trust (IPMIT), by Dennis Walter, M.D., chairman, IPMIT Board of Directors. An overview of IPMIT's progress, organizational developments and financial status was presented.

Blue Shield, by Clarkson Kelly, Jr., M.D., chairman, Blue Shield Board of Directors.

Iowa Foundation for Medical Care, by Richard Perry, M.D., president, IFMC.

AMA Activities, by John Anderson, M.D., AMA Delegate.

Two checks totaling \$16,189 from the AMA-Educational and Research Foundation were presented by Dr. Rodawig, chairman, IMS Board of Trustees, to the University of Iowa College of Medicine. One check was earmarked for an unrestricted grant; the other for medical student assistance. John Eckstein, M.D., Dean, U. of I. College of Medicine, accepted the checks on behalf of the University.

Outgoing IMS President Dennis Walter, M.D., addressed the House. His remarks are printed elsewhere in this issue.

Twenty-one resolutions were formally introduced and referred to reference committees. Actions taken on these resolutions are reported subsequently.

Life Members

The following physicians were elected to Life Membership in the Iowa Medical Society:

Clarence J. Mikelson, M.D., and **Herbert Shulman, M.D.**, Waterloo; **David C. Carver, M.D.**, Rockwell City; **Harry G. Marinos, M.D.** and **Rodger B. Smith, M.D.**, Mason City; **Marcus B. Emmons, M.D.**, Clinton; **Wayne R. Lee, M.D.**, Burlington; **Robert L. Barton, M.D.**, Dubuque; **Elvin D. Thompson, M.D.**, Jefferson; **Johann L. Ehrenhaft, M.D.**, Iowa City; **Frank S. Larsen, M.D.**, Pequot Lakes, Minnesota; **Walter M. Block, M.D.**, and **Cecilia M. Kurtz, M.D.**, Cedar Rapids; **Otis D. Wolfe, M.D.**, Marshalltown; **Keith E. Wilcox, M.D.**, Muscatine; **Daniel F. Crowley, Jr., M.D.**, Rudolph H. Duewall, M.D., Daniel A. Glom-

set, M.D., Parker K. Hughes, M.D., Frederick S. Katzmann, M.D., Leo R. Pearlman, M.D. and Tom D. Throckmorton, M.D., Des Moines; **William O. Griffith, M.D.** and **F. Dale Wilson, M.D.**, Davenport; **Leroy J. Ayers, M.D.**, **Donald B. Blume, M.D.**, **William P. Davey, M.D.** and **Milton D. Grossman, M.D.**, Sioux City.

Fifty physicians were accorded Associate Membership in the Iowa Medical Society.

The speaker presented information on the reference committee hearings, balloting procedures and the concluding session of the House.

April 24 Session

Registered for the April 24 session of the House were 171 delegates and 6 ex officio members. Minutes of the April 23 session were read and approved.

Mrs. Joan LeValley, immediate past president, IMS Auxiliary, addressed the delegates concerning several special Auxiliary projects during her presidency. Mrs. Alice Edwards, chairman of the AMA Auxiliary Health Projects Committee, also addressed the House.

James Davis, M.D., president-elect of the AMA, spoke to the delegates on the benefits of unified membership and other issues of concern to organized medicine.

The following physicians were announced as having been elected or reelected to the positions noted:

President-Elect: **Donald Rodawig, M.D.**, Spirit Lake.

Vice President: **James White, M.D.**, Dubuque.

Speaker of the House: **William C. Rosenfeld, M.D.**, Mason City.

Vice Speaker of the House: **Donald Kahle, M.D.**, Dubuque.

Trustee: **William Eversmann, Jr., M.D.**, Cedar Rapids.

AMA Delegates: **John Rhodes, M.D.**, Pocahontas; **Clarence Denser, Jr., M.D.**, Des Moines and **Donald Young, M.D.**, Des Moines.

AMA Alternate Delegates: **Lawrence Goodman, M.D.**, Marshalltown and **Eugene Johnson, M.D.**, Davenport.

Seven IMS district councilors were affirmed during annual elections:

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District III — **Harold Miller, M.D.**, Davenport.

District VI — **Steven Erickson, M.D.**, Cedar Falls.

District X — **James Black, M.D.**, Marshalltown.

District XI — **Thomas Graham, M.D.**, Cedar Falls.

District XIII — **John Fernandez, M.D.**, Council Bluffs.

District XIV — **Donald Soll, M.D.**, Denison.

District XVI — **Robert Boldus, M.D.**, Sioux Falls.

The speaker complimented the reference committees. Following adjournment of the

'Reference Committee on Reports of Officers and Articles of Incorporation and Bylaws — Jerry Jochims, M.D., Burlington; Kelly Ross, M.D., Osage; James Brown, M.D., Iowa City; Pablo Recinos, M.D., Mason City and Charles Dagle, M.D., Fort Dodge.'

House of Delegates, Daniel M. Youngblade, M.D. was installed as president of the IMS for the coming year and addressed the House briefly. His inaugural comments are published elsewhere in this issue. Organizational meetings of the Board of Trustees and Judicial Council occurred immediately following the installation.

Highlights and actions of the Reference Committee reports are summarized as follows:

House Action: Commended IMS officials for their efforts in the 1987/88 Unified Membership Educational Campaign.

House Action: Directed the IMS Board of Trustees and Judicial Council to give continuing consideration to issues related to Unified Membership, including ongoing education.

House Action: Amended Sections I and IV of Chapter II, IMS Bylaws, to change the membership category of "Associate" member to "Emeritus" member.

House Action: Directed IMS officials to ask the AMA to change its policy regarding specialty journals to a policy where all physicians receive 2 journals, all physicians pay for a second journal or that the AMA assess the need for its publication of specialty journals.

House Action: Commended the IMS Board of Trustees for its efforts in maintaining a financially strong organization and in overseeing the broad range of IMS activities and programs.

House Action: Decided IMS dues for 1989 are to remain at \$350.

House Action: Asked that the IMS send a letter to Otis Bowen, M.D., secretary, Department of Health and Human Services and to the Iowa Congressional Delegation requesting HCFA to develop a complete list of all Medicare services determined to be medically unnecessary and to take appropriate steps to distribute the list to practicing physicians.

House Action: Directed the IMS to ask the AMA to assist in obtaining a complete listing of services determined to be medically unnecessary from HCFA. The IMS is also to support a moratorium by Medicare on medical necessity determinations for reimbursement until appropriate mechanisms are defined for additional data collection from

'Reference Committee on Legislation and Miscellaneous Business — John Fernandez, M.D., Council Bluffs; Thomas Gary, M.D., Cherokee; Charles Helms, M.D., Iowa City; Eugene Kerns, M.D., Davenport and Albert Kollasch, M.D., Belmond.'

physicians when questions of medical necessity arise and until proper review and appeal processes are in place.

House Action: Called for the IMS to encourage Blue Shield, as fiscal intermediary under Medicare, to hold workshops to assist physicians and their billing staff in understanding which physician services may be

deemed to be medically unnecessary under Medicare.

House Action: Directed the IMS to closely monitor development of a resource based Relative Value Scale for reimbursement of Medicare services and where appropriate work with the AMA and other groups to ensure reimbursement for services provided by Iowa physicians are equitable in comparison with services provided by other physicians in the United States.

House Action: Directed the IMS Committee on Medical Service to examine data regarding the differences in fees between Iowa physicians and other physicians across the United States and investigate ways to educate the public regarding these discrepancies.

House Action: Called for the IMS to encourage all physicians — whether IMS members or not — to participate in and support "Medicare Partners."

House Action: Asked the IMS to use "Medicare Partners" as a vehicle to educate the public that many Iowa physicians accept Medicare assignment on a case-by-case basis and that these physicians may be willing to accept assignment when requested by a Medicare beneficiary whether or not the patient is enrolled in "Medicare Partners."

House Action: Directed the IMS Board of Trustees and, if appropriate, the Committee on Medical Service to continue to monitor the activities and communications of the IFMC to ensure that concerns of Iowa physicians are addressed.

House Action: Asked the IMS to encourage the IFMC to investigate additional methods to enhance communications between reviewing physicians and attending physicians and to include these findings in the Foundation's annual report to the House of Delegates.

House Action: Asked the IMS Committee on Delivery of Health Services to continue monitoring the medical manpower issue.

House Action: Directed IMS support for mandatory licensure of hospice programs in Iowa.

House Action: Referred to the IMS Committee on AIDS a resolution asking the IMS support development of compulsory AIDS testing programs, necessary methodol-

ogy for which groups should be tested and information which should be available for public health reasons.

House Action: Referred to the IMS Committee on AIDS resolutions calling for IMS support for the following positions 1) permission from patients not be required to test for AIDS 2) HIV antibody positive patients should be reported to the Department

'Reference Committee on Medical Service — Albert Coates, M.D., Cedar Rapids; Edward Hannon, M.D., Dubuque; Brad Lair, Coralville; Leo Milleman, M.D., Ames and Ronald Zoutendam, M.D., Sheldon.'

of Public Health and 3) follow up contact should be made with all HIV antibody positive patients.

House Action: Approved IMS endorsement of the Student Medical Society's AIDS education project.

House Action: Directed the IMS to support legislation prohibiting the use of ATV's by children under age 16.

House Action: Directed the IMS support legislation to make all public buildings smoke free.

House Action: Approved IMS approval of a position that the current governance of the University of Iowa Hospitals and Clinics by the Board of Regents should be maintained.

House Action: Approved IMS support of appropriate actions to determine and mitigate the deleterious effects of contaminated groundwater.

House Action: Asked the IMS to identify the issue of adolescent impaired drivers as a growing and significant health issue.

House Action: Directed the IMS to take a leadership role in assessing and planning for decreased adolescent morbidity and mortality.

House Action: Asked the IMS to work with the AMA and appropriate state agen-

(Please turn to page 312)

cies to develop an adolescent impaired driver prevention and intervention program.

House Action: Asked the IMS and IMS Auxiliary to acknowledge the magnitude of the problem of adolescent mortality and directed them to confer with the AMA regarding development of a model national adolescent risk behavior conference which could be used in Iowa.

House Action: Directed the IMS and IMS Auxiliary to explore the possibility of adding an adolescent risk behavior health education module at the Des Moines Science Center.

House Action: Asked the IMS to investigate the possibility of making alcohol impaired drivers in the medical system a reportable public health problem and make necessary recommendations to the proper authorities.

House Action: Approved IMS opposition to legalization of Class 'C' fireworks.

House Action: Went on record in opposition to any efforts to weaken the current Iowa Spencer Fireworks Law.

House Action: Directed IMS support for incorporating features of the 1982 National Fire Protection Association Model State Fireworks Law and the Uniform Fire Code regarding possession in the Iowa Law.

House Action: Directed the IMS to continue pressing for passage of medical liability reform legislation, including limits on economic and noneconomic damage awards; and passage of medical liability reform legislation continue to be a matter of highest legislative priority.

NOTICE

A survey to determine readership of the 3 publications the IMS sponsors — *IOWA MEDICINE*, *UPDATE* and *Statehouse Update* was published in the June *UPDATE*. Please take a few minutes to respond to the Reader Survey. Your input is needed and greatly appreciated!

Letter to the Editor

Occupational Medicine Program

I am writing this letter in response to an April, 1987 article entitled "New Dimensions In Occupational Medicine" by James A. Merchant, M.D. The article detailed the impressive progress made at the University of Iowa in occupational medicine.

At Wooster Community Hospital, we are in the process of developing an occupational medicine program which meets the needs of local agricultural and manufacturing industries. As part of the development process, I would like to request any information available on the programs and research discussed in the article. In addition, I would also like the name(s) of anyone who could be contacted directly for assistance and consultation.

I thank you for any assistance that you can provide. — *David Salsberry, Marketing and Planning Manager, Wooster Community Hospital, 1761 Beall Avenue, Wooster, Ohio 44691.*

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The Annual Meeting Through The Camera's Eye

IT'S A WEEKEND FOR renewing old friendships and making new ones, for catching up on the latest medical advances, for socializing with colleagues from across the state and for grappling with complex health care issues one physician aptly called "the Heavy Stuff."

The 1988 House of Delegates and Scientific Session was no different from its predecessors in that it required weeks of advance preparation by IMS officers, member physicians and staff. Without a lot of hard work by a lot of dedicated people, a meeting of this magnitude cannot be a success.

The Annual Meeting is the culmination of IMS yearly activities. It's the weekend when many important decisions are made and the IMS agenda for the coming year is determined. It's the weekend IMS staff members learn about before they are even hired.

But, as any physician delegate will tell you, the Annual Meeting is not just a weekend of hard work. It's also interesting and fun. In the crowd are the seasoned delegates with years of service under their belts, students getting their first taste of medical democracy and a lot of people in between. It's proof positive that organized medicine is alive and well in Iowa.

The weekend officially began with the first Scientific Session seminar at 8:30 a.m. Friday, April 22 and ended with a speech by incoming IMS President Daniel Youngblade, M.D. following the final House of Delegates session early Sunday afternoon. Sandwiched in between those 2 events was plenty of activity.

As 1987-88 IMS President Dennis Walter, M.D. said in his farewell address, it was

a year for critical issues. Resolutions put before the House by county societies and councilor districts across Iowa dealt with many of the most complex socioeconomic issues in health care.

In true IMS tradition, delegates also considered a number of resolutions regarding the health and safety of Iowans. These involved adolescent substance abuse, groundwater, all terrain vehicles, "smoke-free" legislation and fireworks.

But, delegates took time out to enjoy themselves at the President's Reception and hospitality rooms sponsored by county societies and various health care organizations. The upcoming presidential election was the subject of much discussion and not a little humor, especially at Saturday evening's annual banquet. Guest speaker NBC news correspondent Richard Valeriani took an extremely irreverent look at the Iowa Caucuses and shared Washington gossip about the election outcome.

Prior to Sunday morning's House session, one physician wondered what he could do to "really light a fire" under his fellow delegates and make the session a truly memorable one. "Do you have a real big 'Dukakis For President' banner?" someone asked.

On the following pages, the camera records a few of the moments — formal and informal — that typified the 1988 House of Delegates and Scientific Session.

Clockwise from upper right: Outgoing IMS President Dennis Walter, M.D. (at right) with AMA President-Elect James Davis, M.D., guest at the 1988 House of Delegates; delegates rise to applaud Dr. Walter's farewell speech during Saturday's House of Delegates session; Donald Rodawig, M.D. (at left), John Anderson, M.D. and Lawrence Goodman, M.D. share a joke between meetings.

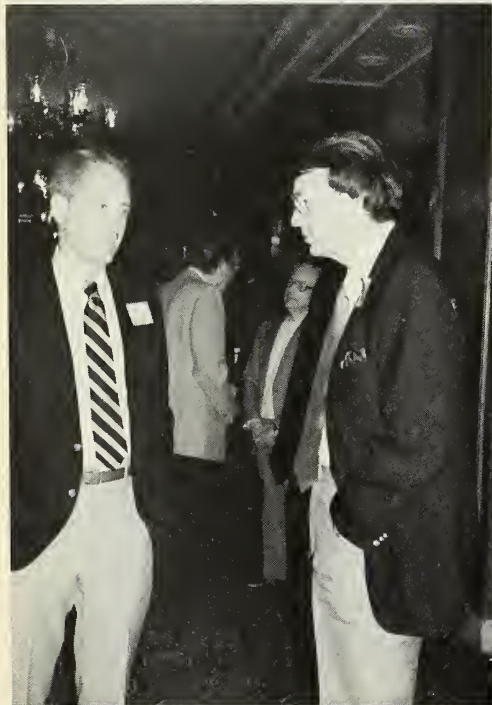
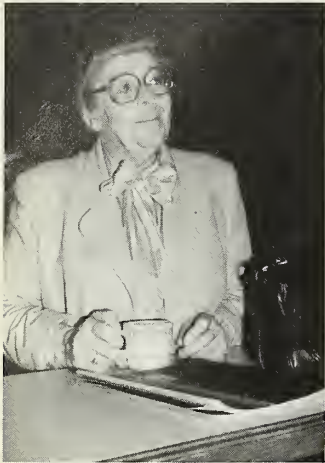






OPPOSITE PAGE, clockwise from upper right: Dennis Walter, M.D., 1987-88 IMS President (at right), passes the gavel to new president Daniel Youngblade, M.D.; members of the 1988-89 Judicial Council (back row, from left) Robert Melgaard, M.D., Lester Beachy, M.D., Thomas Graham, M.D., Don Green, M.D., Robert Kent, M.D. (front row, from left) Harold Miller, M.D., Tom Throckmorton, M.D., Donald Soll, M.D., Albert Coates, M.D. and Robert Boldus, M.D.; Albert Coates, M.D. gives recommendations of the Reference Committee on Medical Service; John Fernandez, M.D., gives the report of the Reference Committee on Legislation; Jerry Jochims, M.D. presents the report of the Reference Committee on Articles of Incorporation and Bylaws.

THIS PAGE, clockwise from upper right: members of the University of Iowa medical student delegation (from left) Brad Lair, Melissa Stiles and Tim Holtz; IMS staff members work late hours after the banquet assembling reference committee reports for Sunday morning's House session; Dorothy Walter assists her husband in straightening his president's medal at the President's Reception preceding Saturday evening's banquet; the funny and irreverent Richard Valeriani, NBC news correspondent, entertained at the annual banquet.



Clockwise from upper right: the 1988-89 IMS Board of Trustees (back row, from left) William Eversmann, Jr., M.D., Bruce Trimble, M.D., Carol Aschenbrener, M.D., Dennis Walter, M.D. (front, from left) James White, M.D., Daniel Youngblade, M.D. and Donald Rodawig, M.D.; past IMS presidents serving as election tellers (from left) William Bliss M.D., John Sunderbruch, M.D., Dean Caraway, M.D. and John Tyrrell, M.D.; Governor Terry Branstad was a special guest Saturday evening; Bruce Trimble, M.D., (left) chats with Larry Goetz, M.D.; B.J. Anderson, AMA associate general counsel, participated in Friday's Scientific Session.

William C. Rosenfeld, M.D.

Questions and Answers



The Speaker Speaks

What is it like to stand on a raised platform in a hotel ballroom and run a meeting of close to 200 physicians? The author, a Mason City internist who has been IMS House of Delegates Speaker for 3 years, gives us his view from the podium.

As you see them, what are the duties and responsibilities of the Speaker of the IMS House of Delegates?

It's my job to organize and chair the annual meeting of the Iowa Medical Society House of Delegates. As such, I'm responsible for forming reference committees, assigning resolutions to appropriate committees and running the meeting. It's also my duty to see that all business is handled in a correct and orderly manner.

Why did you seek this office?

I'd been vice speaker for 13 years and felt I was qualified to serve as speaker. I sought the vice speaker post, because I wanted to become more active in IMS policy-making. As speaker, I very much appreciate the physicians who are willing to take the time to serve on reference committees and the physicians who serve as delegates every year. They make my job much easier.

Was it difficult to prepare yourself to serve as House Speaker? Did your first session come off with no major mishaps?

After 13 years as vice speaker, I felt fairly familiar with the procedure; but I did review some reference materials I got from Dr. Dean Caraway, my predecessor. My first session as speaker was the 1985 special session of the House called to discuss tort reform. In my years as vice speaker, we'd never had a special session but it came off okay. I'm starting to feel more at ease as speaker and am getting to the point where I can pay attention to the substance of a House session and not just the form.

What is the stickiest situation you have faced during your tenure as House Speaker? The most humorous?

The stickiest was 2 years ago when a delegate made an alternate motion that completely changed the original motion and could have cost the Society several thousand dollars if it passed. It did pass, and I really had to restrain myself to keep from making a comment. In some states, speakers comment on motions but I don't.

The most humorous situation happened this April when I was making announcements to the House and couldn't pronounce the name of the banquet speaker (NBC news correspondent Richard Valeriani) correctly. I finally just told the delegates "it says here that he's well-known."

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Iatrogenic Esophagitis

JAMES G. KALAR, M.D.

JOHN N. REDWINE, D.O.

MICHAEL V. PERSAUD, D.O.

Sioux City, Iowa

Tetracycline and its derivatives are widely used in treatment of acne and infections due to chlamydia trachomatis. The authors discuss a patient whose severe chest pain turned out to be a case of esophagitis secondary to drug therapy for a chlamydial infection.

A 29-YEAR-OLD WHITE FEMALE presented with severe chest pain which she described as a burning, pressure-type sensation in the left anterior chest and retrosternal areas. It radiated to the back but not the neck, jaw or arm. The pain was continuous and not aggravated by respiration. She was tachypneic and complained of dyspnea. There was no nausea, vomiting, diaphoresis, fever, chills or sweats and she denied pain or swelling in the legs. There was no prior history of heart or lung disease, ulcers, cholecystitis, pancreatitis or dysphagia.

Dr. Kalar is a resident in the Sioux City family practice residency program. Dr. Redwine is a family practitioner in private practice in Sioux City. Dr. Persaud is in the private practice of gastroenterology in Sioux City.

The patient was completely well the night before. She denied a recent cold or flu-like illness. She had used oral contraceptives for several years and had recently started on doxycycline 100 mg twice daily for a presumed chlamydial infection. She was allergic to penicillin, lincomycin and erythromycin. There was a 25 pack/year history of smoking. Alcohol use was social. Other past medical, family and social histories and review of systems were noncontributory.

Physical Examination

The patient was in marked distress during the physical examination and was most comfortable leaning forward. Her temperature was 99, pulse 95 and regular, respirations 26 per minute and shallow and blood pressure 128/80. HEENT exam was unremarkable. There was no back, chest wall or costovertebral angle tenderness. Breath sounds were mildly diminished in a diffuse fashion and no pleural rubs were present. Cardiac exam revealed a regular rate and rhythm with normal heart sounds. No S3, S4, murmur, gallop or pericardial friction rub was heard. The abdomen was flat and soft with slightly hyperactive bowel sounds. No masses, guarding, organomegaly or tenderness was noted. There was no erythema, swelling or tenderness in the legs. Homan's sign was negative bilaterally.

Chest x-ray showed a normal cardiac shadow without pulmonary infiltrate or pneumothorax. Electrocardiogram revealed normal sinus rhythm at a rate of 96, PR interval 0.12 sec. and QRS duration 0.06 sec. Axis was normal and ST-segments were isoelectric. There

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF JULY 1988

was no evidence of ischemia, infarction, pericarditis or arrhythmias. Meperidine 50 mg was administered intramuscularly without relief. A ventilation-perfusion scan was normal. An echocardiogram revealed normal valves and wall motion without evidence of a pericardial effusion.

The patient was admitted to the hospital and placed on a cardiac monitor. White-cell count was 14,100 with a normal differential. The hemoglobin was 12.3 g/dl and hematocrit was 38%. The erythrocyte sedimentation rate was 12 mm/hr. Cardiac enzymes were normal. Repeat examination showed no change in her status. While trying to eat supper, she complained of severe odynophagia and a sensation of food sticking in her chest. A repeat EKG the next morning was unchanged. The LDH remained normal but the CPK rose to 389 IU/L. However, the patient received IM injections and there was no evidence of MB fraction.

Esophagogastroduodenoscopy revealed a 5 cm circumferential esophageal ulcer 20 cm from the incisors (Figure 1). No stricture formation was seen and the stomach and duodenum were unremarkable. Biopsies revealed hyperkeratosis and reactive changes in the basal layer with acute inflammatory infiltrate (Figures 2-4).

Discussion

Small bowel and colonic ulcerations due to potassium chloride have been known of for over 20 years. Esophagitis due to therapeutic dosages of medications was first reported in



Figure 1. Circumferential esophageal ulceration with hemorrhage 20 cm from the incisors.

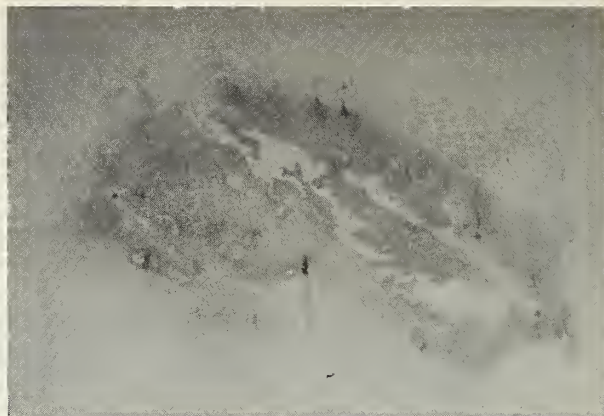


Figure 2. Low power view of biopsy specimen showing ulceration.

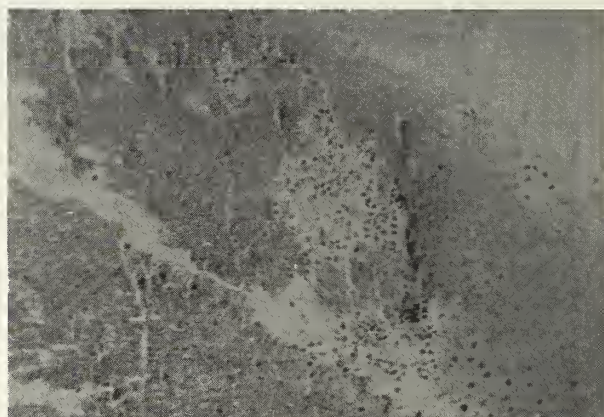


Figure 3. Medium power view of ulceration with submucosal inflammatory infiltrate.

1970.¹ Medications implicated in pill-induced esophagitis are listed in Table 1. The main cause recently has been tetracycline and its derivatives.²⁻¹¹

The pathogenesis is most likely multifactorial. Structural abnormalities predisposing to esophageal obstruction include peptic strictures, congenital esophageal rings or webs, neoplasms, hiatal hernia and external compression from left atrial enlargement, marked cardiomegaly, adhesions and the aortic arch itself. Motility disturbances such as achalasia, scleroderma and diffuse esophageal spasm may also be implicated.⁸ However, most patients have no apparent esophageal abnormality or prior history of esophageal disease.^{3, 7} In such patients, taking the medication with inadequate fluid just before retiring or while recumbent are important factors.

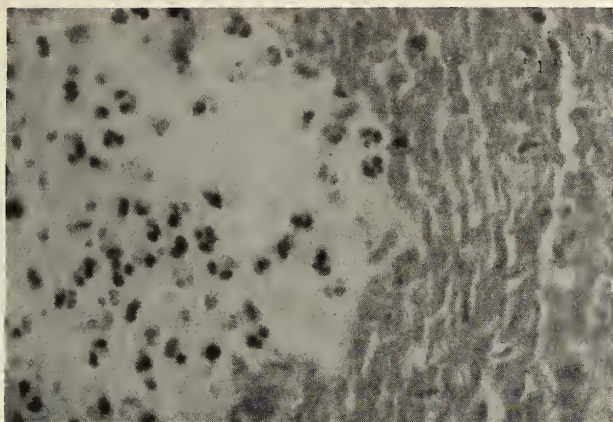


Figure 4. High power view showing acute inflammation.

TABLE 1

MEDICATIONS IMPLICATED IN PILL-INDUCED ESOPHAGITIS

Digoxin	Trinidazole
Digitoxin	Alprenolol
Quinidine sulfate and gluconate	Aspirin
Tetracycline	Indomethacin
Doxycycline	Phenylbutazone
Minocycline	Prednisone
Oxytetracycline	Pentaerythritol tetranitrate
Ascorbic acid	Clintest tablets
Ferrous sulfate	Fluorouracil
Clindamycin	Cimetidine
Lincomycin	Cromolyn sodium
Ampicillin	Carbachol
Penicillin V	Acetaminophen
Erythromycin	Theophylline
Emepronium bromide	

Certain properties of the medication such as acidity or alkalinity may be instrumental in causing esophagitis. For example, doxycycline can take 3 hours to dissolve completely. A 1% solution forms a gel with a pH 2.7-3.0.¹¹ Other drugs have intrinsic irritative effects exclusive of pH. Irritating medications with anticholinergic effects may promote their reflux by relaxation of the lower esophageal sphincter.

The type of formulation can also increase the risk of medication-induced esophagitis. Hey observed that small tablets are swallowed more rapidly than large ones, oval tablets more rapidly than round and coated tablets faster than noncoated.¹⁴ The elderly have particular difficulty swallowing sufficient fluid to promote passage of large pills into the stomach. The quantity of liquid consumed has little effect on the transit time of capsules.¹⁴

The most common site of esophageal ulcers is in the area of the carina and the aortic arch, which may cause external compression.⁷ At this level there is a transition from skeletal to smooth muscle in the esophagus and a physiologic reduction in the amplitude of esophageal peristaltic waves.^{15, 16} Histologic examination usually shows acute, diffuse inflammation with focal ulceration seen less commonly.⁸

Symptoms, Complications

Symptoms, which usually begin acutely but may be insidious, include odynophagia (74%), continuous retrosternal pain or burning (72%) and dysphagia (20%).⁷ These usually start 4 to 12 hours after ingestion of the medication. The sensation of food sticking in the chest may also be described. Esophagoscopy is abnormal in 99% of cases.⁷ The differential diagnosis includes infectious or reflux esophagitis, esophageal foreign body impaction, lye ingestion, recent radiation or chemotherapy, Barrett's epithelium, Crohn's disease or Behcet's syndrome.⁴

Treatment includes analgesics, palliation of the odynophagia with liquid antacids and/or liquid sucralfate, adequate nutrition and observing for potential complications. The offending drug should be discontinued. In uncomplicated cases, symptoms resolve and healing occurs in 3 days to 6 weeks.⁷

Reported complications include stricture formation, hemorrhage and penetration or perforation with resultant mediastinitis, sepsis and death. Erosion through the aortic arch has also been described.¹⁷ Though possible causes of esophagitis, antibiotics and emepronium bromide have not been associated with these serious, life-threatening complications.⁷

Tetracycline and its derivatives are widely used in the treatment of acne and infections due to chlamydia trachomatis. Esophagitis will likely become more common in primary care settings. Several suggestions have been made to decrease the incidence of pill-induced esophagitis. Medications should be taken in the upright position with at least 100 ml of liquid and not less than 1 hour before bedtime. Less corrosive products may be substituted, for example ferrous gluconate for the sulfate salt.¹⁸ For bedridden patients, liquid dosage forms should be used whenever possible. Solid

(Please turn to page 326)



Figure 5. Follow-up endoscopy showing complete healing and absence of stricture formation.

dosage forms may be crushed and dispersed in soft food unless specific contraindications exist; e.g., slow-release formulations or enteric coating.

Treatment and Follow-up

Initial treatment of our patient consisted of elevating the head of the bed, full-liquid diet

with no acidic juices, antacids 30 ml 1 hour and 3 hours after meals and at bedtime, liquid sucralfate (Carafate) 1 g 1 hour before meals and at bedtime and acetaminophen with codeine 60 mg every 4 to 6 hours as needed for pain. The doxycycline was discontinued. She was discharged the day after endoscopy; telephone follow-up 3 days later revealed no improvement. Metoclopramide (Reglan) syrup 10 mg 4 times daily was started with complete resolution of her symptoms over the next 2 days.

Repeat endoscopy was recommended for evaluation of possible stricture formation. The patient returned 8 weeks later. She had been off all medications for 4 weeks. She claimed to have mild, intermittent dysphagia. Upper GI endoscopy revealed almost total healing of the ulcer with only minimal erythema present and no evidence of stricture formation (Figure 5). The stomach and duodenum were normal.

References

References noted in this article are available either from the authors or the editors of IOWA MEDICINE.

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Marion E. Alberts, M.D.

The Editor Comments



Fountains of Life

A FOUNTAIN, TO ME, is a fascinating addition to any landscape. Whether there be multifaceted streams or a single spout, the outpouring of the water has an ever changing pattern. A bit of wind will alter the pattern or the simple motion of the water will change the course of the fall. Sometimes the water simply follows the laws of gravity falling downward on the upward jet. Other times there is a ballet of motion as the water scatters in various directions. A lighted fountain provides a delightful spectacle at night. As a youngster I always enjoyed going to the park in my hometown to see the "rainbow fountain," a very large one with patterned changes of water streams and the blending of the various colors. For about a half century that fountain has delighted the citizens of Hastings, Nebraska.

Life is like a fountain. For some the pattern of life is simple, like a single spout. True there are subtle changes from time to time due to various circumstances, but there is not much variety. For others, the fountain of life is very complex with numerous variations in the manner of display.

Man has characteristics which set him apart from other creatures. We have language, introspection, complex abilities to plan and do tasks and the most developed social behaviors. These characteristics make it possible for us to live very complex life styles that vary according to cultures, environment and geographic location. Some are very poor and others wealthy; some are illiterate and others well educated; some are active while others are laggards. Any of us can relate to someone in any of these or other

groups. So it is in our medical society as well.

This issue of *IOWA MEDICINE* is devoted to the recent IMS Annual Meeting and House of Delegates actions. Two days from a busy practice devoted to the concerns of all IMS members (as well as physicians who elect to not belong) is devotion to a cause. Our medical society has a responsibility to all Iowans, not just physicians. We concern ourselves with provision of excellent medical care to all in a manner consistent with ethical and professional high standards. Our delegates ponder over matters concerning our professional status as well as the issues of providing medical care. As I watched the proceedings of the House of Delegates it was evident to me those persons were representing us in a noble manner.

Like the fountains which I enjoy, human nature is fascinating. So it is with those who represent us. Each has a way of accomplishing the task, each is a symbol of a pattern of life and each accomplishes the purpose of being. Some of our representatives are quiet bubblers, some forceful jets of action and others have a complexity that is very interesting to observe. The end result is the products of the action ultimately falling into a single pool; a reservoir of the results of the efforts expended by whatever means.

What kind of allegorical fountain are you — a quiet trickling of action or a torrent of action and lights that call for greater attention? Whatever, the results may be the same . . . a fountain of action enjoyed by many because it gives measure to the landscape of life. — M.E.A.

Pensions and Black Monday

MANY OF YOU ARE JUST DISCOVERING how your retirement plan survived the 1987 stock market crash. This should not be a time of teeth-gnashing or back-stabbing. It should be a time of reviewing plan design and investment strategy. Also, rules for investing plan assets should be reviewed.

Investment Decisions

The law requires the person responsible for managing the assets of a qualified plan to review each investment decision with attention to cash flow requirements, risk, diversification and rate of return. Physicians who have plans that cover only themselves are not legally bound to this standard, but prudence dictates that they pay attention to it. Black Monday and the subsequent dark gray Tuesdays, Wednesdays, Thursdays and Fridays have substantially increased the apparent risk associated with investing in equity securities. This does not mean qualified plans should depart from the stock market, but it is important to maintain balance.

A retirement plan is not a personal investment portfolio unless you are the only participant. It represents a primary source of retirement income for many participants. This is particularly true in light of fears many people have about the future of social security. A lower overall rate of return may have to be accepted to attain an acceptable level of risk.

Under a defined benefit plan, the security of a participant's retirement benefit does not depend only on the value of plan assets. It depends more on the long-term survivability of the employer. The employer must contribute to the plan to cover losses experienced on investments. This means sponsors of defined

benefit plans who experienced heavy losses last year may see significant increases in funding requirements for those plans.

Employees Concerns

More serious problems might exist with defined contribution plans. Under these arrangements (money purchase pension, target benefit or profit sharing plans) the amount of a participant's future retirement benefit depends on the amount in their account. If the balance of that account decreased significantly in 1987, participants may be very concerned.

Employees are very sensitive about the rate of return on their retirement plan funds. This sensitivity is heightened because of media attention to recent market activities. It is very important employees be fully informed of what happened to their accounts during the year. Rather than simply providing them with a statement of their account balance, give them additional information. For example, if the plan only yielded 2% for the year, show them a 5-year average rate of return. Contrast that to money market rates or treasury bill yields. This may sound misleading as those are frequently low yield investments. However, those are the type of investments employees usually consider.

Employees pay close attention to investment performance on plans funded with employee contributions. (The most popular of these plans is the 401(k) plan or 403(b) plan in the exempt employer setting.) Even if the employee chose the investments, he or she may be dissatisfied because you let them make a bad decision. Therefore you must communicate very effectively when discussing annual performance of these plans.

Our discussion of employee pension plans will continue next month with a look at employers' legal responsibilities.

This article was authored by Arthur H. Perkins, health care consultant to the firm of McGladrey, Hendrickson and Pullen, Des Moines.

U. of I. College of Medicine

A UNIQUE 4-WAY PARTNERSHIP between 7 Iowa communities and their hospitals, the state legislature, the federal government and the College of Medicine, is helping to keep family physician services available throughout the state — even at a time when Iowa is enduring a net loss of doctors. Today's high rate of retirement and relocation among family practice physicians creates a continued demand for such physicians. Last year when Iowa experienced an overall net gain of only 16 doctors in all specialties, the state had a net loss of 26 family physicians. The figures are reported by the College's Office of Community-Based Programs, which administers the Statewide Family Practice Training Program established by the Iowa Legislature in 1973.

GRANT NEWS . . . Long-term effects of maternal alcohol consumption on offspring are being examined by anatomy researchers with the aid of a \$700,000 grant from the National Institute of Alcohol Abuse and Alcoholism. **James West, Anatomy**, received the grant for his project "Fetal Alcohol Syndrome: Third Trimester Model." The results of a series of studies in 1986 and 1987 by West and his colleagues suggest that the pattern of alcohol consumption in expectant mothers can be just as significant in causing damage as the total amount of alcohol they consume. . . . **Allyn L. Mark, Internal Medicine**, is the recipient of the MERIT — Method to Extend Research in Time — award given by the National Heart, Lung and Blood Institute. Mark will receive 10 years of stable financial support to pursue research on the effects of exercise and psychological stresses on the human cardiovascular system. . . . **Carl P. Weiner, Obstetrics and Gynecology**, has received a \$514,500 National Institutes of Health grant to investigate the causes and possible treatments of pre-eclampsia — a hypertensive disease that affects about 7% of all pregnant women.

THE FIGHT AGAINST ALZHEIMER'S DISEASE takes significant steps forward with a new finding by UI neurology researchers. Us-

ing a monoclonal antibody — "Alz 50" — directed against a foreign substance present in Alzheimer's-disease-prone cells, researchers discovered some cells look normal for some time even as they are contributing to the disease process, notes **Antonio R. Damasio, Neurology**. **Bradley Hyman** and **Gary W. Van Hoesen**, both of **Neurology**, collaborated in the research.

A UI-SPONSORED NATIONAL CONFERENCE on reducing health hazards in agriculture is scheduled in 2 sessions — the first in Iowa City Sept. 18-21 and the second in Des Moines Sept. 29-30. Representatives from farm constituency groups, the medical profession, the extension services, the Iowa Legislature and state and federal agencies are participating, says **Kelly Donham, Preventive Medicine and Environmental Health**. The conference is also being supported by contributions from agribusinesses and private foundations.

A \$1.4 MILLION CYSTIC FIBROSIS RESEARCH GRANT has been awarded to the UI to probe cell defects that cause the lethal hereditary disease. **Michael J. Welsh, Internal Medicine**, is the program director. The grant also funds cell culture and molecular biology core programs to provide training and facilities for investigators.

A RECORD 20 MINORITY STUDENTS GRADUATED in May in the College of Medicine's class of 1988, 4 years after they entered through the UI's Educational Opportunity Program. For the past 20 years, the EOP has opened doors for academically qualified students from minority groups that have been under-represented in medicine. The program's success is in the numbers. From 5 out of a class of 171 in 1980, the program has grown to 12 in 1987 to this year's high of 20, or 12.5% of the class.

This report has been compiled by The University of Iowa Health News Service.

Delivery of Prevention Services: A Policy Statement

THE DEPARTMENT OF PUBLIC HEALTH, Division of Substance Abuse and Health Promotion, views substance abuse as a major public health problem. Treatment and prevention involve a continuum of strategies. Strategies vary to meet needs of individuals and groups.

Prevention efforts require attention to 3 factors: the host — the individual; the agent — alcohol and other drugs; and the environment — societal institutions.

Prevention Factors

Host factors in substance abuse involve an individual's motivation for using alcohol and other drugs. Frequently, individuals abuse substances to eliminate distress through chemical pleasure. Substance abuse replaces constructive, pleasurable and meaningful development and effective living. If individuals, families and groups have resources to confront complex, stressful life conditions, they can lead satisfying lives.

A society of healthier individuals means reduced demand for chemicals. Therefore, the division supports primary prevention activities to 1) strengthen identification with viable role models; 2) strengthen identification with and responsibility for family processes; 3) develop problem-solving abilities; 4) develop intrapersonal skills; 5) develop interpersonal skills; 6) strengthen system skills; and 7) develop judgmental skills.

Such agent factors as types, amounts, effects and availability of alcohol and other drugs contribute significantly to substance abuse. Therefore, the division supports public edu-

cation about the hazardous effects of alcohol and other drugs. The division also encourages policies and practices to influence alcohol and drug availability, price and distribution and to work for appropriate legislation.

Groups such as physicians, legislators, pharmaceutical companies, distilleries, breweries and wineries can help reduce substance abuse. However, these groups need to be sufficiently motivated and mobilized by those in the prevention field. Minimizing the occurrence and severity of disability and reducing incidents of premature death related to substance abuse are shared goals. All of society benefits from reducing illegal, irresponsible and inappropriate use of alcohol and other drugs.

Environmental factors in substance abuse also need to be addressed. In a pluralistic society, the social, cultural, political, geographical, religious, ethnic, educational, legal, economic and family milieu influences substance use. The division supports prevention efforts to change systems having a negative impact on the substance abuse-related environment. One example is efforts of parents to shape communities toward a drug-free culture. Institutional-change efforts assume that strengthening individuals is insufficient.

Prevention Services

In FY 1987, division-funded prevention programs provided comprehensive services to an estimated 187,623 individuals. This figure does not include individuals participating in these innovative program activities: 2 projects on children of alcoholics; a senior awareness service for the elderly; 2 minority youth projects for Black and Indian youth; and a longi-

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

tudinal study of school children, beginning in kindergarten. Comprehensive services offer information, education/skill building, early intervention, alternatives, social policy strategies and consultation. These services are provided in a variety of settings to a number of groups including youth, teachers, parents, women and minorities as well as the general population.

Effective July 1, 1987, the division contracted with 26 prevention programs for delivery of comprehensive prevention services in all 99 counties. The division also funded these innovative projects: a young moms and dads program, elderly peer counseling, intervention services for Indian children and their families, prevention services for persons in correctional facilities, 3 statewide training projects, prevention services for Hispanics, 2 school projects and a longitudinal study of school children. A manual, developed by each project staff, can be replicated.

The division also funds the Iowa Substance Abuse Information Center in Cedar Rapids. In FY 1987, the center provided journal articles, films, books, pamphlets and cassette tapes on substance abuse prevention and treatment issues to approximately 10,940 groups and individuals throughout Iowa. A toll-free number (1-800-247-0614) increases citizen access to the center's extensive resources.

In Iowa, parent and community groups make a major contribution to the substance abuse prevention effort. Activities of these volunteer groups are funded primarily through community and private donations. In 1983, the Iowa Network of Drug Information (INDI), a statewide federation of these groups, was established. INDI's goals are to establish and maintain a network with all of Iowa's parent and community groups; to share information, ideas and speakers; and to help start new groups.

(Please turn to page 336)

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*Journals reviewed include: *Circulation*, *American Heart Journal*, *Journal of the American College of Cardiology*, *British Heart Journal*, *Chest*, *The American Journal of Cardiology*, *The New England Journal of Medicine*, *Annals of Internal Medicine*, *American Journal of Medicine*, and *The Journal of the American Medical Association*.

Summary of substance abuse trends in Iowa

Like other diseases, 3 factors affect substance abuse and dependency — the host, the agent and the environment. The following trends, organized by this 3-factor, public health model, are based on the most current data sources.

The host (the individual) — Since 1961, the number of Iowans who are "at risk" of becoming problem drinkers and those requiring treatment has increased. This change is most noticeable among Iowa's rural (farm and

non-farm) population. Drinking patterns among city, rural and town dwellers are converging, washing out historical differences.

Based on the amount of cocaine confiscated and the dramatic increase in persons admitted to private and public treatment programs for cocaine abuse, the number of individuals requiring treatment for this dependency-producing drug will continue to escalate.

Most persons entering private treatment programs have multi-drug problems; 95% to 100% of juveniles could be considered poly-substance users. Nearly all women admitted

May 1988 Morbidity Report

Disease	May 1988 Total	1988 to Date	1987 to Date	Most May Cases Reported From These Counties	Disease	May 1988 Total	1988 to Date	1987 to Date	Most May Cases Reported From These Counties
AIDS	4	16	17	NA	Malaria	0	0	2	
Amebiasis	2	4	14	Cerro Gordo, Johnson	Meningitis aseptic	2	14	13	Black Hawk, Linn
Brucellosis	0	1	2		bacterial	11	56	39	Benton, Black Hawk, Page, Polk, Scott, Tama
Chickenpox	930	5760	6830	Scattered	meningococcal	0	0	3	
Campylobacter	30	107	95	Scattered	Mumps	2	31	308	Polk, Scott
Cytomegalovirus	0	4	8		Pertussis	0	15	6	
Eatons Agent Infection	0	21	33		Rabies in animals	19	72	132	Scattered
Encephalitis, viral	0	7	1		Reye Syndrome	0	0	0	
Erythema Infectiosum	31	89	788	Scattered	Rheumatic Fever	0	0	2	
Gastroenteritis (GIV)	2228	12649	10053	Scattered	Rubella (German measles)	0	0	1	
Giardiasis	14	122	96	Scattered	Measles	0	0	0	
Hepatitis, A	4	30	61	Fayette, Hamilton, Johnson	Salmonellosis	16	32	94	Scattered
Hepatitis, B	10	42	54	Scattered	Shigellosis	22	94	9	Scattered
Hepatitis, Non A-B	2	8	14	Johnson, Pottawattamie	Toxic Shock Syndrome	0	2	2	
Hepatitis type unspecified	0	1	3		Tuberculosis total ill	1	15	11	Page
Herpes Simplex	89	443	504	Scattered	bact. pos.	1	12	12	Page
Herpes Zoster	0	0	2		Typhoid Fever	0	0	0	
Histoplasmosis	2	6	7	Dubuque, Polk	Venereal diseases				
Infectious mononucleosis	22	80	123	Scattered	Gonorrhea	156	806	1229	Scattered
Influenza, lab confirmed	5	109	67	Scott	Chlamydia	355	1740	1433	Scattered
Influenza-like illness (URI)	2793	24011	23469	Scattered	Syphilis	1	10	9	Woodbury
Legionellosis	5	9	5	Johnson, Muscatine, Polk, Wayne, Webster					

Other Non-Reportable Diseases: Ureaplasma Urealyticum — 1, Johnson.

to special inpatient programs also used several chemical substances.

The agent — Increasing the number of retail outlets for the sale of wine helped reverse the downward trend in wine sales. It is too soon, however, to assess the long-term effects of the change from a liquor and wine control state to a state where all alcoholic beverages are sold at private, retail stores.

For both adults and juveniles, alcohol continues to be the primary abused drug in Iowa. Marijuana is the second most abused substance.

The Department of Public Safety, Division of Criminal Investigation, reported a major increase in the amount and estimated value of drug seizures. Marijuana seizures more than doubled in amount and value from 1985 to 1986. Since 1983, the amount and street value of cocaine seizures have tripled. Other drug seizures (LSD, heroin and amphetamines) declined in 1986. The Iowa Board of Pharmacy Examiners also reported an increased number of thefts and total dosage units stolen.

The environment — Apparently efforts to eliminate drunk driving are producing results. In 1986, 33 fewer people died in substance abuse-related accidents than in 1985. This reduction helped Iowa end the year with the second lowest number of total traffic deaths in 41 years. Also, fewer people died of substance-abuse causes in 1986.

By nearly every measure, substance abuse continues as a major problem for the criminal justice system. Most of those incarcerated in state prisons and on parole have problems with alcohol, drugs or both.

Like youngsters in Iowa public schools, the percent of those in the state's juvenile institutions who do not use alcohol and other drugs is increasing, except for cocaine.

The Department of Public Health develops an annual state plan for substance abuse prevention and treatment. Copies may be obtained at the Division of Substance Abuse and Health Promotion, Lucas State Office Building, 321 East 12th Street, Des Moines, Iowa 50319, 515/281-3641.

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About Iowa Physicians

Dr. Roger I. Ceilley, Des Moines, has been named president of the American Society for Dermatologic Surgery at the society's 15th annual Clinical and Scientific Meeting in Monterey, California. Dr. Ceilley is a clinical assistant professor of dermatology at the U. of I. College of Medicine. **Dr. Emmett B. Mathiasen**, Council Bluffs, has received the Heritage Award for his contribution to the health field in the Council Bluffs area at the fifth annual Mercy Hospital Heritage Dinner. **Dr. Brent Liebert**, has joined the Family Health Clinic of Carroll. Dr. Liebert received the M.D. degree from Indiana University School of Medicine, Indianapolis and served his residency in Decatur, Illinois. Prior to joining the Family Health Clinic, Dr. Liebert practiced medicine

in Grundy Center. **Dr. Paul Ferguson**, Lake City, has been named a delegate to the National Cancer Society. Dr. Ferguson was chosen by the Iowa Division of the American Cancer Society for which he served as president for 2 years. **Dr. Jon Fleming**, staff gastroenterologist and internist at the McFarland Clinic, P.C., Ames, has been accepted as a Fellow to the American College of Physicians. **Dr. Frederick C. Blodi** and **Dr. Paul M. Seebohm** received a Friend of the University Award at the University of Iowa's 1988 Distinguished Alumni Awards. Dr. Blodi is a professor emeritus of ophthalmology at the U. of I. College of Medicine. Dr. Seebohm is coordinator of the Statewide Family Practice Residency Program

(Please turn to page 340)



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and a member of the U. of I. Department of Internal Medicine and College of Medicine.

Dr. James Rochelle, has begun practice in Council Bluffs. Dr. Rochelle received the M.D. degree from Creighton University School of Medicine, Omaha, Nebraska and completed his residency in orthopedics at Hamot Medical Center in Erie, Pennsylvania. Prior to locating in Council Bluffs, Dr. Rochelle practiced in North Kansas City, Missouri and was the director of the Sports Medicine Clinic at Trinity Lutheran Hospital in Kansas City, Missouri.

Dr. Dale P. Anderson, Ames, has been named medical director for McFarland Clinic in Ames. Dr. Anderson is also medical director for the emergency department and the hemodialysis unit at Mary Greeley Medical Center. **Dr. Marion E. Alberts**, West Des Moines, has retired from 35 years of pediatrics practice. Dr. Alberts received the M.D. degree at the University of Nebraska College of Medicine, Omaha and completed his residency at Blank Children's Hospital, Des Moines.

Deaths

Dr. Robert Y. Netolicky, 81, Cedar Rapids, died April 21 at St. Luke's Hospital. Dr. Netolicky received the M.D. degree at the U. of I. College of Medicine and served residencies at the University of Wisconsin and University of Pennsylvania. He practiced medicine for over 50 years before retiring, most of the time in Cedar Rapids. Dr. Netolicky was a life member of the Iowa Medical Society and the American Medical Association.

Dr. Robert A. Huber, 72, longtime Charter Oak physician, died April 27 at Crawford County Memorial Hospital. Dr. Huber received the M.D. degree from the U. of I. College of Medicine and served as an Army physician during World War II. He practiced medicine for 46 years until retirement in 1987 and was a member of the American Academy of Family Physicians.

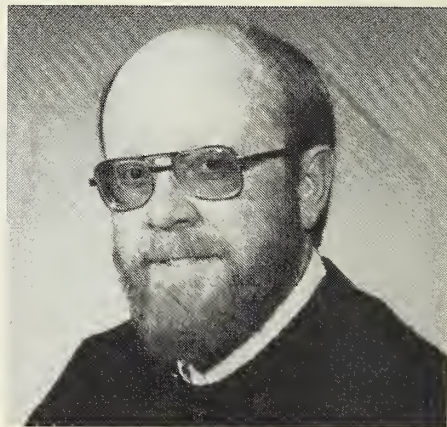
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Focus on Public Health Issues

NEVER IS THE CONCERN of organized medicine for our citizens' continued good health so apparent as at the annual Iowa Medical Society House of Delegates meetings.

As in the past years, physicians from across Iowa representing their county societies at the 1988 IMS House of Delegates considered a number of "in the public interest" policy proposals. Following is a recap of public health resolutions considered by the House and referred to various IMS committees. Over the next year, these committees will investigate the proposals further and make recommendations on how they can best be carried out.

AIDS . . . Before next year's House of Delegates meeting, IMS officials will be exploring a number of proposals aimed at managing the AIDS crisis and preventing further spread of this tragic disease. Various AIDS testing programs will be considered in addition to several plans for educating the public about the disease.

ALL TERRAIN VEHICLES . . . In response to a number of tragic accidents involving ATV's, physician delegates overwhelmingly supported a resolution to support legislation prohibiting use of ATV's by children under age 16.

SMOKE FREE BUILDINGS . . . The Iowa Medical Society continues to take an active role in protecting citizens from the effects of secondhand smoke. Physicians approved a resolution directing IMS support for legislation banning smoking from all public buildings including restaurants.

DRUNK DRIVERS . . . Based on a recommendation from the House, the IMS will be investigating the possibility of making alcohol-impaired drivers in the medical system a public health problem reportable to the proper authorities.

ADOLESCENT HEALTH . . . The House considered and referred a number of resolutions regarding adolescent health. IMS physician delegates identified adolescent impaired drivers as a growing health problem and directed the IMS to investigate working with the American Medical Association and state agencies to develop a prevention and intervention program. The IMS also plans to continue its leadership role in assessing and planning for decreased adolescent morbidity and mortality. The Society and its Auxiliary will confer with the AMA regarding development of a model national adolescent risk behavior conference. Finally, the IMS and the Auxiliary will investigate the possibility of placing an adolescent risk behavior health education module at the Des Moines Science Center.

FIREWORKS SAFETY . . . Physician delegates went on record as formally opposing any efforts to weaken the current Iowa Spencer Fireworks Law or legalize Class 'C' fireworks.

MEDICARE ASSISTANCE . . . Physician delegates approved a resolution formally urging all IMS members to participate in the IMS 'Medicare Partners' program. Medicare Partners is a voluntary Medicare assignment program through which physicians forgive certain medical expenses for patients who meet certain income guidelines.

These and other issues receiving ongoing attention from organized medicine in Iowa demonstrate the public interest is and will remain the most vital consideration for Iowa physicians.

July 1988

Iowa Medicine

Daniel M. Youngblade, M.D.

President's Privilege



Physicians' Responsibility Toward Dying Patients

EFFORTS TO DEFINE POLICIES for withdrawal of life-sustaining procedures from hopelessly ill or dying patients are a relatively recent development. As medical technology continues to advance, more decisions dealing with various aspects of this subject along with debate of crucial ethical questions continue to surface. Formulation of acceptable guidelines for physicians treating the hopelessly ill or dying has remained a difficult issue.

Two important issues must be considered: the patient's role in the decision-making and a decrease in aggressive treatment of the hopelessly ill patient when such treatment would only prolong an uncomfortable process of dying. The patient's right to make decisions about his or her medical treatment is clear. That right, grounded in both common law and constitutional right of privacy, includes the right to refuse life-sustaining treatment. Ideally, this right should be exercised when the diagnosis and treatment are clear, the physician is skilled and sensitive and the patient is competent and informed. If the patient's condition becomes progressively worse, the physician must rely increasingly on the presumed or the prestated wishes of the patient.

The physician has a major role in this decision-making process. He or she has the knowledge, the judgment and skills to provide diagnosis and prognosis, offer treat-

ment choices and explain their implications, and assume responsibility for recommended treatment. Physicians do not easily accept that it may be best to do less, not more, for the patient. The decision to pull back is much more difficult to make than the decision to push ahead with aggressive support, and today's sophisticated and complex medical technology invites physicians to make use of all the means at their disposal.

Although relief of pain and suffering is the primary consideration in the care of all hopelessly ill and dying patients, differences in patients' disabilities dictate differences in the appropriate form and intensity of their care and treatment.

Few topics in medicine are more complicated, more emotionally charged or more controversial than the treatment of the hopelessly ill and dying. Technology competes with compassion, controversy is inevitable and legal precedents lag far behind. The problem is least troublesome for all when an informed patient and an empathetic physician together confront a clearly defined outlook.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

Caring for the Dying Patient

Physicians tending terminally ill patients face a number of extremely difficult emotional issues. For this month's special feature, IOWA MEDICINE assembled 5 experts to discuss these issues and how they are best addressed. Participants in the discussion are: Mark Johnson, M.D., a Mason City internist and co-medical director of Hospice of North Iowa; Ann MacGregor, executive director, Hospice of North Iowa; Agnes Downs, director of patient care, Hospice of North Iowa; Theresa Hogenson, social worker, Hospice of North Iowa; and Dee Huntley, a Mason City cancer patient.

IOWA MEDICINE: What role does each of you play in the care of the dying patient?

DR. JOHNSON: Physicians caring for a dying patient must try to know the dynamics of the family. We don't make much attempt to do that for other patients on a day in day out basis. We try to provide holistic medical care and to think about personal, social and family implications in clinical care, but you don't do it at the same level as for a terminal patient.

There are 2 paths you take when you're giving clinical care. One path is traditional care — the curative approach — trying to cure the patient. The second is palliation, which has a flavor and style that's different.

When I acknowledge a patient is terminal, I make a conscious decision to go down the second path. You're treating symptoms and supporting the patient but not necessarily prolonging their life. One of the keys to giving really successful care to terminally ill patients is to be able to make that decision and make it in a timely fashion. Many physicians have a hard time acknowledging that their patients are dying.

ANN MACGREGOR: I'd like to emphasize the importance of the team concept in providing care to these patients. The interdisciplinary team is vital in provision of hospice care and directs everything we do for and with the patient and family.

AGNES DOWNS: I see myself as a liaison between the nurses, the team, the family and the medical community.

THERESA HOGENSON: As the team social worker, I'm there for emotional support for the family and patient. I'm there for the nurses as well. There are many issues to deal with, including fears of dying or financial worries. Maybe they're worried about how their spouse can make it alone or they're concerned about not being able to pay the bills.

IOWA MEDICINE: Should and how should patients be told they are dying?

AGNES DOWNS: When I go to a home, I'm very careful to feel out where the family and patient are in their thoughts about the patient's future. I don't talk to them about dying unless that is something they want to talk about. They let you know where they are.



Ann
MacGregor

'We recognize that no one person can do it all for the terminally ill patient and family. All the disciplines need to work together.'

DR. JOHNSON: I'm very forthright with my patients. I give them the opportunity to stop me if I'm being too candid. Occasionally, I've had people or families say this is not a good time, and I stop. But I make it clear there are very important issues to be addressed. Once they understand they're not going to survive the illness, we go on to discuss how they feel about resuscitation, being taken back to the hospital, etc. You can only talk about these issues if the patient and family can admit the patient is terminally ill. That sometimes comes over weeks, even months; but most of the time, patients and families are more prepared than they were even 5 years ago.

IOWA MEDICINE: What has made the difference between now and 5 years ago?

ANN MACGREGOR: I think patients are educated to the point that they're really in control. They should be in full control of what is done to them or for them. It is their right to have as much or as little information as they choose. In Hospice, we begin at whatever level understanding they are at and move from there. If they want to move forward in gathering more information on what is going on medically, we'll facilitate that. But we don't push it or initiate it.

DR. JOHNSON: Patients have a right to denial. Some patients die with denial. It's their only defense mechanism. Who are we

to say that's wrong if that's the way they cope?

DEE HUNTLEY: I've always wanted to know everything; but, I live one day at a time. Some of my better days are days that I act like anyone else and don't even think about my cancer. Then I can get on and maybe do something great for myself that day. I think every cancer patient, although they're not in deep denial all the time, sometimes will deny just in order to have a better day.

Today, I do not feel like I'm dying. I have cancer, my prognosis is not good, but who's to say I'm going to die of it? I could be killed on my way home today. I don't spend a lot of time dwelling on death because it leads to denial. I have cancer and it's never going to leave me, but I don't call myself a dying patient every day or I would die real soon.

ANN MACGREGOR: In Hospice, we talk about living rather than dying.

THERESA HOGENSON: We talk about living and making plans. Dee, for example, is going to Washington soon. I think that's fantastic. Patients need to be able to set some goals and carry them out. That's living, not dying.

IOWA MEDICINE: Elizabeth Kubler-Ross defines 5 stages of dying as denial, anger,

(Please turn to page 358)

Agnes
Downs



'You can't help patients live each day to the fullest if you can't help them control the bad symptoms and the pain.'

bargaining, depression and acceptance. How can you best help the patient through the first 4 stages into the last one?

THERESA HOGENSON: I think most of it is just listening, being there to answer questions, helping them realize those are normal things for them to go through. Most patients don't go through these in sequence, they flip flop from stage to stage and may never get to the acceptance stage. You can't push them through the stages. A lot depends on their life experiences, how they've handled things before.

AGNES DOWNS: They may never go through 5 stages, they may go through one stage on to acceptance. It's not necessary to go through all the stages. It depends a lot on age, what kind of family involvement they have.

DEE HUNTLEY: I've gone through all those stages. Sometimes, I go back and feel them again. Some days I get up and I feel angry because I can't go to work that day. I feel this even when I've gotten to the last stage where I have hope of being able to accept everything.

DR. JOHNSON: Which stage is the most difficult to deal with?

DEE HUNTLEY: I have a real problem with the anger stage because I know I've got

to get rid of it in order to move on. But, at least I recognize it.

IOWA MEDICINE: Are antidepressant drugs useful during the depression stage?

DR. JOHNSON: We use antidepressants liberally because studies very clearly show they are appropriate. Anywhere from 40-50% of patients who are terminally ill have clinical depressions. Certain patients are prone to depression and others are not. For the most part, patients who respond to antidepressants stay on them the majority of the time. We try to identify these people early because they can be immensely better with medication. If we have any question, we often give them an antidepressant therapy trial of 3 to 4 weeks.

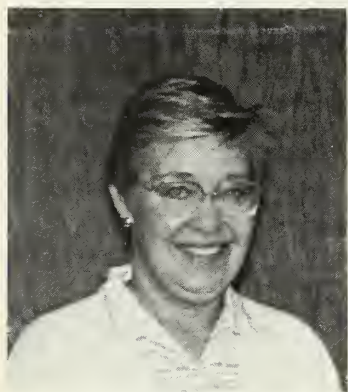
IOWA MEDICINE: What can be done for the patient who is not helped by pain therapy, whose pain can't be alleviated?

AGNES DOWNS: We don't allow that to happen. Symptom control is a top priority. You can't help patients live each day to the fullest if you can't help them control the bad symptoms and the pain. Pain and symptom control is an ongoing thing. There are lots of other things you can do for them besides medication. It takes a lot of discussion.

DR. JOHNSON: From the day we admit a patient to Hospice, we establish credibility with that patient and the family by relieving symptoms. If you can't do that you can't go on to all the other things that need to be done. We are very aggressive in controlling their discomfort. This means the nurses on the Hospice team have discretion in dosing because they are in the home with the patient.

IOWA MEDICINE: How can family members be counseled to cope with the terminal illness of a loved one?

DR. JOHNSON: From my observations, these patients are worried most about the people they will leave behind. They don't grieve for themselves, they grieve for those who will be left. Most patients come to a pretty good reconciliation of the fact they're no longer going to be there physically. They have a hard time coping with the realization that others are going to have to live without them.



Dee
Huntley

'I don't spend a lot of time dwelling on death because it leads to denial. I have cancer and it's never going to leave me, but I don't call myself a dying patient every day or I would die real soon.'

AGNES DOWNS: We do our best to encourage communication between the patient and family members.

THERESA HOGENSON: We try to provide support for family members, help them find the strength and courage to survive this. Hospice also has grievance support for family members after the fact. It's important for the patients to know this service is available to help their family.

DEE HUNTLEY: My family is really struggling. I think they need as much attention as I do. But I can't provide it for them, they have to seek it themselves. Some of my family and friends are pre-grieving. Some are reaching out for help and some aren't. They're wishing they had more strength to deal with it all but I can't help them. That's what's hard.

IOWA MEDICINE: How does hospice care differ from hospital care?

ANN MACGREGOR: Hospice is not a place, but a concept of care that involves the patient and family. We can provide hospice care in any setting, though the emphasis is on the home care setting. Wherever the patient and family are, that's where we direct our efforts.

THERESA HOGENSON: In my experience, patients are more comfortable in the home setting, particularly when it comes to discussing difficult issues.

DR. JOHNSON: One particular difference between the home and the hospital is that treatment is patient-directed at home. Hospitals are set up for routines. Hospitals don't have the flexibility to easily render hospice care because in the home we do whatever the patient wants. I've had patients in significant pain ask not to be given their analgesics because they want to be awake when the family is there. In the hospital, the patient would get the medication anyway.

Remember, the care giver in the home is usually a family member who gives anything of themselves for that person. It's hard to match that kind of care in a hospital. Probably the biggest challenge in the hospital is to render the same excellent care that the family gives in the home. The hospitals are doing better as they become more familiar with the hospice concept.

**Mark
Johnson, M.D.**



'Physicians also have to deal with the fact one of their patients — perhaps a friend — is dying. It's a painful thing and physicians go through it time and time again.'

ANN MACGREGOR: It's important to note that hospice care may not be appropriate for everyone. Everyone may not want to stay in their home and all caregivers may not feel comfortable caring for a seriously ill family member. We try to facilitate whatever is the wish of the patient and family. If someone lives alone and wants to remain there, we do everything in our capability to help make that possible. It takes a lot of energy and creativity.

IOWA MEDICINE: Are physicians aware enough of what hospice can do for them and their patients?

DR. JOHNSON: The north Iowa physicians are. We've been fairly evangelical and it takes only one positive experience with any individual physician or group of physicians and they are believers forever. But, in many communities hospice is a very political animal and has not been accepted. Some physicians feel they're being preempted in caring for their patients.

I admit I feel a brief loss of control when the hospice nurse suggests a better way of doing things, something I haven't thought of. Physicians are trained to take a leadership role. But in the team setting of hospice, nurses are peers and have signifi-

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Theresa
Hogenson

'There are many issues to deal with. Maybe they're worried about how their spouse can make it alone or they're concerned about not being able to pay the bills.'

cant expertise and experience to aid the physician. Physicians also have to deal with the fact one of their patients — perhaps also a friend — is dying. It's a painful thing and physicians go through it time and time again. The hospice team supports the physician in this difficult situation.

ANN MACGREGOR: We recognize that no one person can do it all for the terminally ill patient and family. All the disciplines need to work together. Hospice enhances the role of the physician with the patient and family.

I feel hospice has enhanced the physicians' practices in terms of relating to dying patients. Several physicians have told me that, because of what hospice does with these patients, they find it easier to deal with the terminal issues. These are physicians who formerly felt a sense of inadequacy in coping with the psycho-social issues of the dying patient and family.

DEE HUNTLEY: My doctor wanted me to tell you that, because of his patient load, he could never have given me the personal attention Hospice of North Iowa has given me. I feel bad for people who aren't interested in the program because it's really helped me.

DR. JOHNSON: I encourage physicians to be the access point for their patients even if they're not sure the program is appropriate for a particular patient. They can at least make the contact and the referral and let the decision be made by the hospice team, the patient and the family.

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Hospice: A Special Kind of Caring

ANN MACGREGOR

Mason City, Iowa

In Iowa and across America, hospice symbolizes a special kind of care for dying patients and their families. The author discusses how hospice was born and the services it provides.

HOSPICE CARE has been provided for centuries. The word hospice, derived from Latin, originally meant a shelter for travellers. In the middle ages, hospices were maintained primarily by religious orders as resting places for pilgrims journeying to the Holy Land. Hospice signified a place providing care, nourishment and love.

The modern hospice evolved in England during the 1960's. The first U.S. hospice was founded in 1974. In Iowa, hospice was established in 1978, the same year the National Hospice Organization (NHO) was founded. NHO focuses on promoting the hospice concept and high quality standards for hospice care.

The hospice philosophy as stated by NHO, is as follows:

Ann MacGregor is executive director of Hospice of North Iowa, president of the Iowa Hospice Organization and a board member for the National Hospice Organization.

"Hospice provides support and care for persons in the last phases of incurable disease so that they may live as fully and comfortably as possible. Hospice recognizes dying as part of the normal process of living and focuses on enhancing the quality of remaining life. Hospice affirms life and neither hastens nor postpones death. Hospice exists in the hope and belief that through appropriate care, and the promotion of a caring community sensitive to their needs, patients and their families may be free to attain a degree of mental and spiritual preparation for death that is satisfactory to them."¹

The modern hospice is a concept. It is ideas and attitudes supporting services based on a holistic approach to living and dying.

In America, health care services have followed the availability of health care dollars. Hospice may well be an exception to that pattern. The concept evolved from the perspective of early leaders who felt dying patients were not adequately supported by traditional means.

During the "grass roots" period, hospice activity poured into communities across the country. Organizations assumed many forms, expressing community need and leadership style. In 1987, NHO reports an estimated 1,683 hospice programs provided care to the terminally ill.² Of these, 42% are independent, 27% are hospital based, 22% are home health agency based and the rest are coalition models, nursing home or HMO based.¹ There is no right or wrong model. Each program reflects the viewpoints of its founders and the match between community characteristics and available resources.

What distinguishes hospice care from more traditional services?

- Patients are usually accepted into a program when their life expectancy is felt to be 6 months or less. However, not all programs have a specified time limit. Physicians are encouraged to make early referrals to provide support prior to the last few weeks of life. The majority of patients have a malignant disease but other diagnoses are also considered appropriate for hospice care. Data gathered by NHO for 1986 indicates 32% of all patients dying of cancer were served by a hospice program of care.¹

- Hospice considers the dying person and their family as the unit of care. Inclusion of the family is essential. Family members, serving as primary caregivers, also need care and support to relieve their stress.

- An interdisciplinary team that includes physicians, nurses, social workers, psychologists, clergy, therapists and others is utilized. No one individual can provide total care to a dying patient and family. The team approach insures the care is comprehensive and continuous. Weekly team conferences are the rule and communication is the key.

- Hospice care centers on maintaining the patient at home but may provide services in any setting. The original founders of hospice encouraged care outside traditional institutional settings.

- Trained volunteers augment staff services and provide special support to the patient and family. Fundamental to the hospice philosophy is preservation of the tie between the patient and the community to minimize isolation during the last phase of illness. Community volunteers perform this function by reaching out to the family. The volunteer enables all involved to remain in contact with the world beyond their own home and the hospice.

- Services are available 24 hours a day to respond to the needs of the terminally ill. This provides a high degree of security and comfort for the patient and family.

- Though hospice helps prepare family and friends for the death of a loved one, additional support is always needed after the loss occurs. Bereavement support and follow up are available to the family.

The role of the physician in providing hospice care is critical. The hospice team considers the physician as a leader in the plan of treatment and care.

Hospice programs also have medical directors who assist in the development and implementation of specific protocols and policies. They may be paid, but most are volunteers. They are valuable in maintaining contact with the attending physician and serving as consultants. They stay abreast of current hospice theories and practices, especially in pain and symptom control. They attend interdisciplinary team meetings and serve as vital sources of information and support for the team.

**"Death Closes All: But Something Ere the End
Some Work of Noble Note May Yet Be Done."³**

Doctors faced with a patient whose disease is clearly ineradicable still sometimes say there is nothing more to be done. This statement reflects the difficulty medical staff can have switching their commitment from treatment for cure to palliative control of distress caused by persistent and uncontrollable disease. Throughout the last phases, the patient needs the same detailed approach as when the original diagnosis was made. The treatment will demand much of the physician's time and expertise and the skills of other professions.⁴

Physicians should consider referrals to a hospice program as early as is deemed appropriate if hospice intervention is to be maximally effective. When physicians participate in this phase of care and are responsive to the suggestions of the hospice team, an effective working relationship can be developed which provides the greatest benefits to the patient and family.

Dramatic changes in health care have occurred during the last decade. It is not surprising that efforts to organize hospice care have been affected. Standards, regulations, licensure and reimbursement were inevitable developments.

The future of hospice depends on developing policies and supporting research which validates the concept. The advantages of hospice care versus traditional terminal

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care must be analyzed and cost effectiveness demonstrated.

I believe the essence of hospice will survive. If hospice care can be maintained as skilled, intensive and compassionate, it will remain the preferred form of care for terminally ill patients and their families. Commitment to quality, attention to detail, focus upon the patient and family as the unit of care and the effective use of an interdisciplinary team provide a model for other health care disciplines.

Continued development of successful hospice programs will assure humane, palliative care for dying patients and families.

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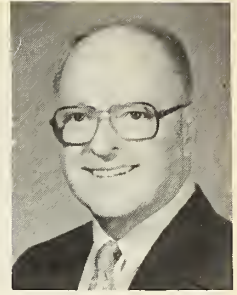
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Spiritual Aid for Dying Patients

The author, minister of membership at the Plymouth Congregational United Church of Christ in Des Moines, outlines the role clergy play in assisting terminally ill patients and discusses how physicians and ministers can facilitate each other's efforts on behalf of such patients.

How can the clergy help terminally ill patients?

So much depends on the existing relationship of trust and friendship. Beyond this are variables which need to be identified, such as traditions of religious faith and style, the level of articulation and understanding and the personal resources the patient has. Is there a family in the picture? Friends? How united is this support? Using Kubler-Ross definitions, where is the patient? Does the patient want to talk about approaching death? This is no time to extract a conversation or to violate the protective space the patient may have established. We can't generalize, since each patient is an individual and is surrounded by a unique galaxy of environments.

With these qualifiers, I try to help the patient:

- stay in control as long as possible
- use and trust the resources of her/his environment

- express feelings, and to use my friendship as needed

- believe that life does have meaning, and has been okay

- know that the God of love and grace whom I represent by my presence is here

I use language in keeping with the religious vocabulary of the patient, but the intent is to be a stabilizing, dependable friend who is in touch with larger frameworks of life, and life after life. I keep trying to imagine what I would think and feel in that same place, and aim my conversations accordingly.

How can you help a patient who has a fear of dying?

By being honest and understanding. No one is immune to this fear. So many things inhere: the sense of loss, the unknown, the fear of terminal pain and all the cosmic and religious imagery collected over the years. Perhaps some event or relationship needs to be "put to right."

I try to help by being available and open, letting the patient know I can be trusted. My faith tradition teaches that "it will be alright," and when appropriate I can verbalize this. It is a time to embrace and to agonize with, not a time for cliches. I encourage patients to draw on whatever personal resources of faith and belief they possess. We draw on scripture, prayer and the presence of God's spirit. Fear is not overcome by courage; it is overcome by love.

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How do you counsel with family members of a terminally ill patient?

How important to know these family members if possible and to assess the "chemistry" at work among them as they relate to each other and to the patient! There are many expectations at work in these situations.

I try to help the family realize what is taking place and try to interpret how the patient seems to desire to play out the situation. I may need to interpret some of the medical intervention, encourage the timeliness of "exit conversations" and help family members work through their own denials and fears.

A living will may have been written. In any case, an agreement on the aggressiveness of treatment and palliation needs to be reached. Inadequacies in the family relationships are often exposed in these critical moments and they can influence actions and feelings. Clergy can help to clarify the values involved and bring religious resources into play.

What is the relationship between the physician and the pastor in such a situation? Is there enough communication?

Unless the doctor and the pastor are friends and meet at the club or at church, it is unlikely there will be any communication. Both are care givers and both are busy people involved in their own disciplines. Both are concerned with the patient's well-being. Some physicians cannot deal with death, which they see as a defeat to their intervention; some clergy feel doctors resent the clergy's intrusion onto "their" turf.

Clergy can be a humanizing presence in an environment of machines and procedures frightening and foreign to the laity. It's more than a stereotype needed (the physician looking after the body and the clergy after the soul). It is a sense of teamwork and a recognition the patient is a whole person whose spiritual attitude has a bearing upon the efficacy of medical treatment. I respect the skill and knowledge of the physician and always appreciate the doctor who makes me feel included in the care plan.

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TENS for Post-Surgical Analgesia Following Gastropasty

JAMES M. CATERINE, M.D., F.A.C.S.

DAVID C. SMITH, M.D.

JOSE OLIVENCIA, M.D.

Des Moines, Iowa

Transcutaneous Electrical Nerve Stimulation (TENS) is recognized as a useful adjunct in treatment of chronic pain. In post-operative patients, it reportedly decreases the need for narcotics and reduces incidence of post-operative atelectasis and ileus. The authors discuss a study of post-operative patients done to determine the pain relieving effectiveness of TENS.

THE STUDY COMPARED THE AMOUNT of post-operative medication and incidence of post-operative pulmonary and gastrointestinal complications between 25 patients using Transcutaneous Electrical Nerve Stimulation (TENS group) and 25 patients upon whom it was not used (Non-TENS group).

Dr. Catherine is a general surgeon and practices in Des Moines. Dr. Smith is a general surgeon associated with Dr. Catherine. Dr. Olivencia specializes in diseases of obesity and practices in Des Moines.

All 50 patients were morbidly obese, weighing at least 100 lbs. over ideal weight. All patients had a vertical ring gastropasty performed through a zyphoid to umbilicus midline incision. In all instances the procedure was completed in 1 hour or less. A Gomez frame with attached retractor blades was utilized in all patients. The surgery was performed by the same 2 surgeons.

The average weight of the TENS group was 264.2 lbs. while the Non-TENS group averaged 255.5 lbs. The average age of the TENS group was 35.12 with 24 females and 1 male. The Non-TENS group was 37.72 with 23 females and 2 males (Table 1).

The unit used on all patients in the TENS group was a SelectraTM Dual-Channel TENS 7720 manufactured by Medtronic. The unit was pre-set at a rate of 85 Hertz and pulse width of 50 microseconds. The intensity or amplitude range was 2-99 milliamperes determined by the individual patients tolerance. At completion of the procedure, sterile 37 mm x 250 mm TENZCARE strip-electrodes with self-adhesive backing were applied to both sides of the vertical incision which was moistened with sterile water to enhance conductivity.

All patients spent the first post-operative night in the surgical intensive care unit and were transferred to a general bed the next morning. All patients were attended by nursing personnel instructed in the use of the TENS unit. Detailed instructions in its use were given to the patients in the TENS groups by the nurs-

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ing staff. Patients began using the TENS unit immediately following recovery from the anesthetic.

Demerol 75 mg with Vistaril was the usual analgesic medication for the TENS group. Demerol 100 mg without Vistaril was used for the Non-TENS group. (The difference reflects the individual preference of the 2 surgeons involved in this study.)

Both groups were monitored for 6 post-operative days plus the day of surgery. Most were dismissed on the seventh post-operative day.

Pre-operative and post-operative chest x-rays were taken on all patients. The post-operative films were taken in the SICU the morning of the first post-op day.

Results

The patients in the Non-TENS group used fewer injections of narcotics on all post-operative days including the day of surgery (Table 2). The Non-TENS group required an average total of 14.56 injections while the TENS group needed 21.24 doses (Table 3). A difference of 32% fewer narcotic injections were required in the Non-TENS group of patients. It should be pointed out there was no significant difference in the total amount of Demerol used between the 2 groups because the Non-TENS group received 25 mg more Demerol in each injection but without the Vistaril given the TENS group.

The TENS group had more x-ray confirmed pulmonary complications than the Non-TENS group (Table 4). The Non-TENS group had 3 cases of atelectasis and 1 case of pleural effusion while the TENS group had 6 cases of atelectasis and 1 case of pulmonary edema.

No appreciable difference in the degree or amount of post-operative ileus was noted between the 2 groups of patients.

Discussion

Based on our results, TENS did not decrease the need for narcotics or the incidence of post-operative pulmonary complication. This is consistent with results reported by a study conducted by Gilbert but contrary to other reports in the literature.^{1,2,3,4} We have investigated various possibilities to explain why our results differ from those in the literature. Cooperman et al reported that if narcotics were used pre-operatively little or no relief was noted post-operatively with TENS.²

TABLE 1
STUDY GROUP DATA

Patient Profile	TENS	No TENS
Sex: Male	2	3
Female	23	22
Average Weight	264 lbs	255 lbs
Age (years)	35.12	37.72

TABLE 2

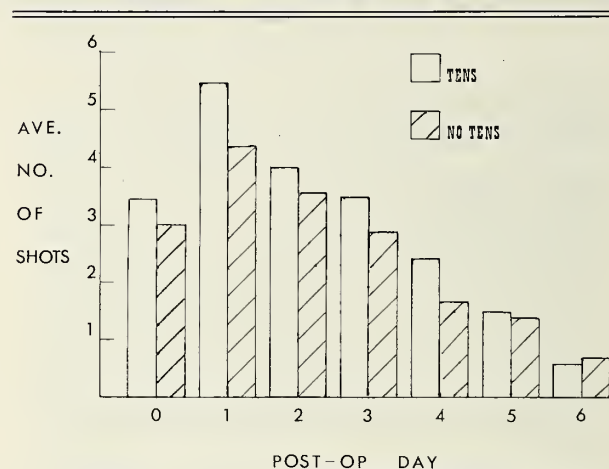


TABLE 3
AVERAGE INJECTIONS PER PATIENT

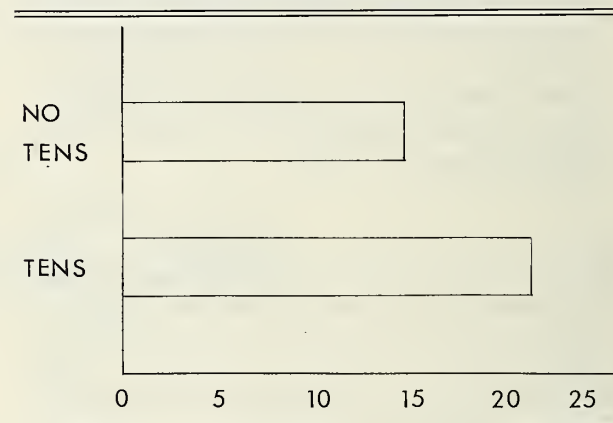


TABLE 4
COMPLICATIONS

	TENS	No TENS
Atelectasis	6	3
Pulmonary Edema	1	1
None	18	21

The TENS group was pre-medicated with the same medicants as the Non-TENS group. This included a narcotic in most instances but did vary according to the individual preference of the particular anesthesiologist.

We are unaware of any studies proving an antagonistic effect of Vistaril with TENS. Nevertheless, this medication exclusively used post-operatively in the TENS group may have had some effect on the results seen in the TENS group. Generally Vistaril is thought to enhance the analgesic effect of Demerol.

Inspection of the individual TENS units established they were not malfunctionary and were correctly pre-set. Procedural review with the nursing staff revealed no discrepancy in proper patient use of the unit.

Both groups shared the problem of morbid obesity. Very thick layers of adipose tissue in the anterior abdominal wall was the usual finding. It is possible the electrodes were not placed close enough to each other to obtain an arc deep enough to penetrate the excess fat and reach the muscle wall. The square waveform provides deeper penetration and was utilized in the TENS group. If the depth of wave penetration is related to the distance between electrodes, it is possible penetration could be increased by placing the electrodes directly on each side of the abdominal wound.

Letters to Editor

Bureaucratic Breakthrough for Iowa

Cleft lip and cleft palate deformity are among the most common congenital malformations with an incidence of one in approximately 600 births. Plastic surgeons are usually able to make these children look so close to normal that the average person will never know anything was ever wrong. Our goal is to get these children looking so good by the time they start school that their peers won't tease them and cause them psychological trauma.

Yu and Carroll report that placing electrodes over acupuncture points will increase analgesia.⁵ They use the Chinese concept of "CUN" in determining electrode placement. One CUN is equal to a "human inch," or the distance between the interphalangeal joints of the index finger. A distance of 8 CUN is recommended when pain is in the area bordered by the xyphoid and center of the umbilicus. The concept of CUN was not utilized in our study. What effect this concept might have had on our TENS group remains speculative.

It is of interest that one-third of the TENS group said they had excess discomfort or pain from using the TENS unit and that it did not reduce the pain. This is consistent with the findings reported by Dougherty.⁶

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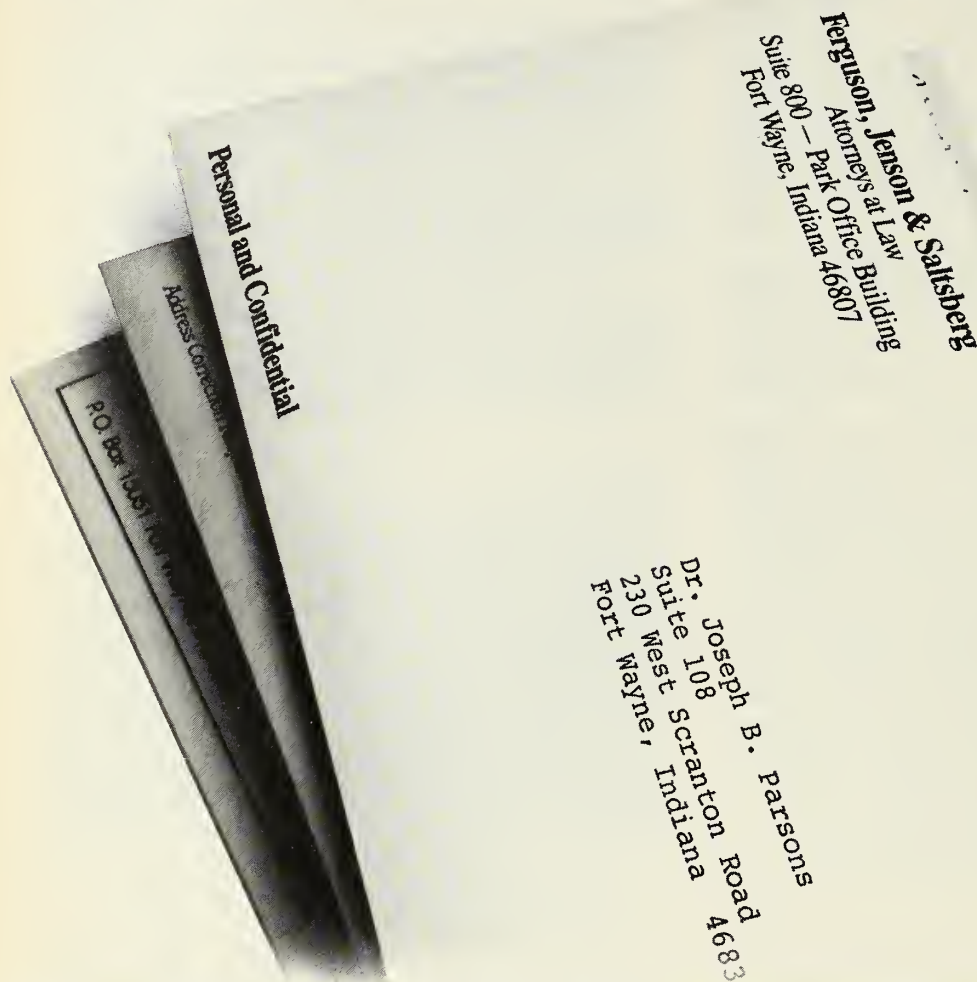
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Because of growth or lack of growth in the affected part, what might be a good result one year could be a lousy result the next year. Therefore, these children need multiple operations to obtain the optimum result. The treatment of cleft lip and cleft palate patients is a multidisciplinary approach encompassing plastic surgeons, otolaryngologists, orthodontists, pedodontists and speech pathologists.

Governor Branstad — recognizing the special needs of these children — recently ordered the people who run Medicaid to allow them to be reconstructed by any plastic

(Please turn to page 373)

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surgeon to within the level of the state-of-the-art of plastic surgery. Prior to Governor Branstad's executive order, Medicaid did not cover needed touch-ups, classifying them as cosmetic surgery. All work on cleft lip and cleft palate children is reconstructive surgery and should not be considered cosmetic surgery.

I thank Governor Branstad for his efforts on behalf of children with cleft lip and cleft palate deformity. Obviously, Iowa is a good state in which to live and practice medicine. — *James O. Stallings, M.D., Des Moines.*

Well Elderly Clinic

We know that often physicians do not take the initiative in worthwhile programs. One of these programs is the Well Senior Citizen Clinic. All over the state these clinics are run by nurses and are supported and financed by the state or federal government, which would tell them what to do and what not to do.

I met with a group of senior citizens in Charles City and proposed a Well Senior Citizen Clinic which I would run unsupported by the government or state. I talked to the administrator of our hospital who will give us the medical supplies we need, free of charge, and we started the clinic.

We do not charge and we will not treat. I diagnose, advise and send them to the doctor of their choice. This is most satisfying and I enjoy it. The patients seem to enjoy it and they are grateful.

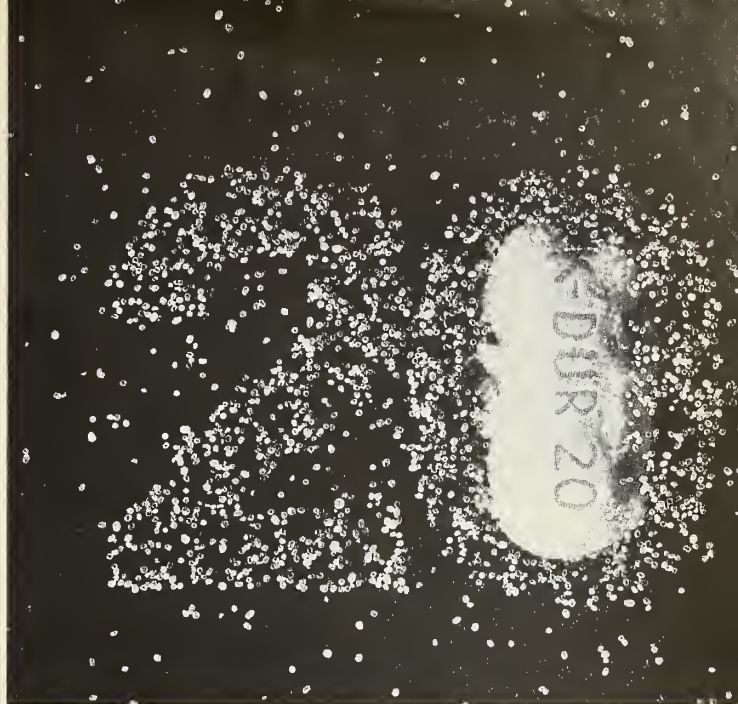
I think it might not be a bad idea if other retired doctors would consider doing something similar so we can fight govern-

(Please turn to page 374)

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Please see next page for brief summary of prescribing information.

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K-DURTM Microburst Release System (potassium chloride) Sustained Release Tablets

INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS.

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium-Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS, and OVERDOSSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS and WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS and WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3. Correction of acidosis, if present, with intravenous sodium bicarbonate.

4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

ment and federal intervention. So far, we hold clinic one day a week and I am considering 2 days a week, but not more.

I wanted you to know what I am doing. You take it from here. — W. P. Pelz, M.D.,
Charles City, Iowa.

Life Members

It has been brought to our attention 2 life members of the Iowa Medical Society were inadvertently omitted from the July, 1988 House of Delegates issue (1988 House Sets Policy on Key Issues, p. 309). They are Alroy G. West, M.D., Council Bluffs and Rolin M. Perkins, M.D., Davenport.

We regret the error and congratulate these doctors along with the other doctors elected to life membership in the IMS. —
The editors of IOWA MEDICINE.



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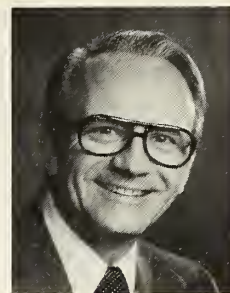
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Marion E. Alberts, M.D.

The Editor Comments



Letting Go

Editor's Note: As I was pondering my editorial for this month's issue on caring for the dying patient, I had the good fortune to come across the following insightful and beautiful editorial. It appeared in the June, 1988 edition of MISSOURI MEDICINE and was written by editor Donald G. Sessions, M.D. With the kind permission of MISSOURI MEDICINE, I am able to share it with you. — M.E.A.

HE WAS SHORT and thin. There was something about him that commanded your attention. Perhaps it was his eyes. They were very dark and they were very intense. They seemed to see right through you. Yet it was more than just his eyes. It was really his bearing — the way he carried himself — his very being. He had a quiet dignity which was not so much expressed by the way he talked, or by his clothes, or his posture but just by the way he was.

He had come in on a Monday afternoon, referred with an advanced cancer of the palate. He had a retinue of women with him. His wife was intense and apprehensive. His 2 daughters were attentive. It was a nervous entourage. They listened to what I said and asked some penetrating questions of me and then turned to him. He would obviously make the final decisions. The

emotional tension of his women was an interesting contrast to his own quiet dignity.

I suggested some very aggressive therapy, a combination of irradiation therapy and surgery, and after some discussion they agreed to follow my recommendations. He went through the therapy with grace. At each office visit he was accompanied by his increasingly-attentive wife and at least one daughter. His course did not go smoothly. He had several bouts of facial cellulitis. He was hospitalized for debridement of some bony sequestra. Seldom did he complain. It appeared that he had the pain and his women did the suffering.

Almost 3 years after the onset of his disease he began to have double vision. Exam showed paralysis of an eye muscle and the CAT scan showed an unresectable recurrence at the base of the skull. This was discussed in depth. He had some chemotherapy without any demonstrable change in the tumor. He continued to have a deep-seated pain which was his permanent companion. His wife and daughters continued to suffer.

I noticed that I was less than enthusiastic when I saw his name on my office list. It was clear that it had nothing to do with him, since he and the family were nothing less than totally supportive of our efforts to

(Please turn to page 376)

care for him. I suppose it was my feeling that I somehow had personally failed him that made me uncomfortable when I knew he was scheduled to be seen in the office. That and my normal disinclination to address the issue of death, especially my own through someone else. The interesting phenomenon, of course, was that when he did arrive in the office, all of this mental activity dissolved in the human connection that was our relationship.

I don't know when it happened. He had had his recurrent disease almost a year. I kept wondering why or how it was that his tumor process was proceeding so slowly. Anyway, sometime toward the end of last year I noticed that a shift had occurred. Something about him was different. It was more noticeable in his wife and daughters than in him. Somehow the situation was less tragic. His wife lived in a mood of peace. I actually looked forward to their visits. It was clear to me that if they were able to "let go" of the tragedy of the situation then who was I to hold onto it.

From their efforts I saw that they were committed to create value and satisfaction out of what remained of his time on the planet. They were able to do this as a family unit, I believe, because of their willingness to authentically address the facticity of life. Somehow they experienced that life is the way it is — that we are all here and that no matter what, we'll all die — that death, specifically his death, is one of the unalterable characteristics of life.

Letting go, accepting that we will die, creates interesting and powerful possibilities. We can refuse to accept it, saying that we can control life and defeat death; or we can be in wonder at it and celebrate life.

Kahlil Gibran has addressed this issue in *The Prophet**:

"You would know the secret of death.

"But how shall you find it unless you seek it in the heart of life?

"The owl whose night-bound eyes are blind unto the day cannot unveil the mystery of light.

"If you would indeed behold the spirit of death, open your heart wide unto the body of life.

"For life and death are one, even as the river and the sea are one.

"In the depths of your hopes and desires lies your silent knowledge of the beyond;

"And like seeds dreaming beneath the snow your heart dreams of spring.

"For what is it to die but to stand naked in the wind and to melt into the sun?

"And what is it to cease breathing, but to free the breath from its restless tides, that it may rise and expand and seek God unencumbered?

"Only when you drink from the river of silence shall you indeed sing.

"And when you have reached the mountain top, then you shall begin to climb.

"And when the earth shall claim your limbs, then shall you truly dance."

He continues to go slowly downhill. I am empowered by his courage. He continues being himself with quiet dignity. His older daughter summed it up the best — "He's really taught us alot."

*Gibran K, *The Prophet*, NY, AA Knopf, 1977.

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AGENDA

GENERAL INTERNAL MEDICINE

Neuroleptic Malignant Syndrome
The New Antiviral Agents
Pulmonary Embolism and Deep Vein Thrombosis
Management of Urticaria

NEPHROLOGY

Antibody Mediated Renal Disease
Rapidly Progressive Glomerulonephritis

RHEUMATOLOGY

Human Parvovirus Infection and Its Chronic Sequelae
New Strategies in Drug Therapy of Rheumatoid Arthritis
Recognition of Spinal Stenosis

PULMONARY DISEASES

Approach to the Patient with Pulmonary Disease: The
Importance of the Pulmonary History
The Molecular Basis of Cystic Fibrosis

ALLERGY-IMMUNOLOGY

Use and Abuse of I.V. Immunoglobulins
Differential Diagnosis and Treatment of Rhinitis

HEMATOLOGY-ONCOLOGY

Growth Factors and the Treatment of Malignancy
Bone Marrow Transplantation

CARDIOVASCULAR DISEASES

Advances in the Treatment of Hyperlipidemia
Percutaneous Transluminal Balloon Valvuloplasty

CLINICAL EPIDEMIOLOGY

Diseases of Travelers
Influenza

Guest Faculty:

Curtis B. Wilson, M.D., Department of Immunology, Scripps Clinic and Research Foundation, La Jolla, California.
David J. Salant, M.D., Associate Professor and Chief, Renal Section, Department of Internal Medicine, Boston University Medical Center, Boston, Massachusetts.
William C. Roberts, M.D., Chief, Pathology Branch, Division of Intramural Research, National Heart, Lung and Blood Institute, Bethesda, Maryland. Editor-in-Chief, American Journal of Cardiology.



Dr. Xz, the Placebo

I FEAR SOMEONE HAS BEEN lacing my morning coffee with lithium. My plans for the compassion indicator and the functioning skyhook, both of which I promised would appear in this column, have run into a temporary hitch. Sorry. Instead, let me tell you about Dr. Xz.

Faculty members often recall Dr. Xz, whom they regard as a well-meaning but blundering, ignorant, dangerous alumnus who has a very large practice in which each patient seems thoroughly devoted to him, even adoring. My colleagues laugh while heaping scorn upon him and his benighted patients. It seems not to dawn on my confreres — and only recently on me — how he offers his patients *much that matters to them*. He provides accessibility, sincere expressions of concern for their well being, hope, a promise of continuing to care and frequent use of placebos.

If we studied this man's behavior and why he produces so much satisfaction in helping patients deal with their illnesses (even though he too often bumbles badly, even tragically, in dealing with their diseases) we could advance enormously our ability to help patients. But first the rest of us, foremost we educators, must distinguish clearly between disease and illness and

abandon "the scientific fallacy" which says that if we can't measure it, it doesn't exist.

In the case of Dr. Xz, we might study the "placebo effect" that he himself produces. We could monitor pulse rates and other measures of tranquility or distress in his patients as he enters and leaves the room. (You may remember how young children respond at the sight of the white coats — that's why nurses and other staff in some pediatrics units dress in "regular clothes" on duty.) One simple monitor, in an educational setting anyway, would be to ask a patient, "Do you feel better (or the opposite, or nothing) after Dr. Xz sees you?"

I've discovered in conversation with faculty colleagues from around the nation that at least one Dr. Xz has graduated from each institution. Some estimate at least one from every graduating class. Perhaps you know him. Maybe you *are* Dr. Xz. If you believe you are not Dr. Xz and take pride in not being, yourself, a placebo, you are missing something of great importance you should be providing your patients. Or maybe you haven't recognized or accepted that quality or skill in yourself. If it's truly absent, maybe Dr. Xz (or more all-around good role models) would be willing to take you on for some tutoring.

Again, I apologize for what I trust will be only a short delay in getting to you the details for my compassion-indicating film badges and my fully operational skyhook.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

More on Retirement Plans

LAST MONTH, WE DISCUSSED basic concerns about employee retirement plans. Some of you may have already been confronted by a disconcerted employee demanding to know what you can do about their plan's assets. What are your responsibilities for dramatic plan investment losses? ERISA establishes broad rules covering the activities of those investing the funds of qualified retirement plans.

Plan fiduciaries are required to perform their duties 1) solely in the interest of the participants and beneficiaries; 2) exclusively for the purpose of providing benefits or paying reasonable administrative expenses; 3) with the care, skill, prudence and diligence a prudent person familiar with these matters would use; 4) diversifying plan investments to minimize risk; and 5) in accordance with the plan's terms.

Because these guidelines are so general, the Department of Labor has issued guidelines to use in evaluating individual investment decisions. If you follow these closely and document your decisions, a presumption is established you have done your job correctly. This can be very valuable if an employee chooses to second guess you.

These regulations require analysis of each investment choice in light of risk, cash flow and rate of return. Few of us are skilled in financial evaluation; you may wish to engage an independent trustee or a professional money manager. However, this does not completely relieve you of responsibility for investment decisions if you maintain any control over the activities of these professionals. You simply share the responsibility.

In the event someone with investment au-

thority over a plan is responsible for losses on assets held to have been an improper investment, that person is personally liable and must repay the loss and restore any lost income. You are personally liable if your plan experienced huge losses last year. A loss does not mean an investment was inappropriate. It must show the purchase was ill advised or the investment manager should have sold it earlier. It would be difficult to prove this with the publicly traded stocks that took a beating last fall. Clearly, no one had sufficient advance warning.

There is another way to protect yourself besides engaging a professional money manager. ERISA contains language providing total exclusion from fiduciary liability for plans that allow the participants to direct accounts. Until recently, no one was certain how much discretion had to be given to participants to satisfy this exception but the DOL has issued proposed regulations on this exception. Though lengthy and still in proposed form, these regulations make this exception surprisingly easy to satisfy. Participants may be allowed only the choice between 4 different funds offered by regulated investment companies for investing account balances. The participant then becomes the money manager and is responsible for the results.

Remember, these rules are designed to protect future benefits. They are not meant as an impediment to establishing or maintaining plans. The bottomline is to use caution, discretion and good sense. Where you are uncertain, engage competent professionals. If you do not wish to deal with the problems presented by the uncertain marketplace, consider providing enough individual participant control to satisfy the new proposals by the Labor Department for participant directed accounts.

This article (as well as last month's article) was authored by Rebecca Miller, a partner specializing in employee benefits from McGladrey, Hendrickson and Pullen, Des Moines.

Enhanced Services for Pregnant Women

ENHANCED SERVICES FOR LOW INCOME, high risk pregnant women have a positive impact on birth outcomes. The California Obstetrical Access Pilot Project provided comprehensive enhanced prenatal care to 5,388 Title XIX eligible women from 1979-1982. The mothers in the project had a 4.7% low birth weight rate compared to a 7.0% rate for a matched group. A cost savings of \$1.70-\$2.60 for every \$1.00 spent on prenatal care was realized. A 1985 study conducted by the Institute of Medicine showed that every \$1.00 spent saved \$3.38 in the total cost of care for low birth weight infants.

Enhanced services include psychosocial services, nutritional assistance, health education and case management. These services are available to low income and Title XIX eligible pregnant women in Iowa through Title V-funded Maternal Health Services. Maternal Health Programs strive to assure quality, comprehensive prenatal care and help each woman maximize the learning and growth potential her pregnancy has to offer, with the ultimate goal of a healthy mother giving birth to a healthy infant.

Case Management

Case management by a registered nurse or social worker allows coordination of comprehensive prenatal services: outreach and community education to promote early entry into care; assurance that the pregnant woman receives all components of care, e.g. medical, psychosocial and nutritional services and health education; risk tracking; assistance in arranging for prenatal classes and delivery

plans; and referral for family planning, child health and WIC services postpartum. The case manager works with the pregnant woman's physician and other service providers to achieve optimal pregnancy outcome. The low income or Title XIX eligible woman may enter the system through her own physician or the Maternal Health Program case manager who would assure she has a physician.

Psychosocial Services

Psychosocial services include an assessment of a client's social environment including emotional and family patterns which may impinge on provision of health care to the woman. The assessment identifies adjustment to pregnancy, family configuration and relationships, support systems, mental health history and environmental and financial needs. Maternal Health Programs provide patient education and crisis intervention to help women and their families with social, emotional and financial problems as they relate to holistic health care. Many psychosocial problems also require referral and collaborative efforts with other agencies.

Nutritional Assistance

Nutritional services begin with a dietary assessment by a licensed dietitian. Counseling is designed to emphasize the relationship between nutrition and good health, to provide education on special dietary needs during pregnancy, to promote optimum nutrition throughout life, to help the individual at nutritional risk achieve positive changes in food habits and to provide encouragement and support to breastfeed her infant. However, counseling and support are provided with any infant feeding method the mother selects.

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

Health Education

Health education services are provided by a registered nurse. Topics include anatomy and body changes during pregnancy; fetal growth and development; warning signals indicating a need to contact their physician; exercise needs; special needs of the individual woman; health risks during pregnancy, e.g., drugs, smoking, alcohol, x-rays, breast care, common discomforts of pregnancy and relief measures; sexuality; hygiene and clothing; labor and delivery; and preparation for the infant.

Dental services provided by a dental hygienist or a registered nurse are also an integral part of health education. Dental services are designed to assess the dental health status of the pregnant woman; to assist in obtaining

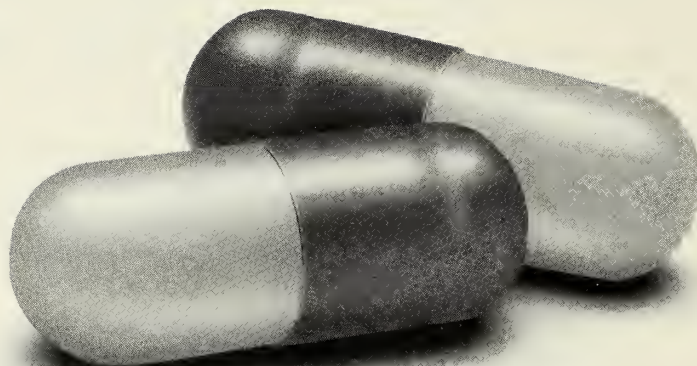
necessary dental treatment through referral to a dentist; to provide counseling on the prevention of dental disease; and to provide dental education on infant oral care.

The ultimate goal of enhanced services is to match expectant mothers, especially those in need or "at risk," with appropriate resources.

The benefits of enhanced services have been well documented, including a decrease in the incidence of low birth weight and significant savings beyond program expenses. Physicians interested in additional information may contact their local Maternal Health Program or the Maternal Child Health Bureau, Iowa Department of Public Health at 1-800-532-1579.

June 1988 Morbidity Report

Disease	June 1988 Total	1988 to Date	1987 to Date	Most June Cases Reported From These Counties	Disease	June 1988 Total	1988 to Date	1987 to Date	Most June Cases Reported From These Counties
AIDS	3	19	20	NA	Influenza-like illness (URI)	1419	25430	24627	Scattered
Amebiasis	3	7	16	Boone, Muscatine	Legionellosis	2	12	5	Lyon, Osceola
Brucellosis	0	1	3		Malaria	1	1	2	Woodbury
Chickenpox	646	6406	7487	Scattered	Meningitis aseptic	4	18	14	Cerro Gordo, Keokuk, Polk, Story
Campylobacter	16	182	142	Scattered	bacterial meningococcal	9	65	49	Scattered
Cytomegalovirus	0	4	9		Mumps	1	32	358	Scott
Eatons Agent Infection	0	21	37		Pertussis	0	15	9	
Encephalitis, viral	1	8	1	Scott	Rabies in animals	15	87	159	Scattered
Erythema Infectiosum	18	107	875	Black Hawk, Jones, Scott, Worth	Reye Syndrome	0	0	0	
Gastroenteritis (GIV)	210	13727	10748	Scattered	Rheumatic Fever	0	0	2	
Giardiasis	23	145	131	Scattered	Rubella (German measles)	0	0	1	
Hepatitis, A	2	32	75	Cerro Gordo, Scott	Measles	0	0	0	
Hepatitis, B	5	47	71	Black Hawk, Polk, Scott	Salmonellosis	23	55	71	Scattered
Hepatitis, Non A-B	2	10	14	Clinton, Pottawattamie	Shigellosis	30	124	11	Scattered
Hepatitis type unspecified	1	2	3	Henry	Toxic Shock Syndrome	2	4	4	Floyd, Winnebago
Herpes Simplex	87	530	601	Scattered	Tuberculosis total ill	3	18	20	Jefferson, Polk, Webster
Herpes Zoster	0	0	2		bact. pos.	3	14	20	Jefferson, Polk, Webster
Histoplasmosis Infectious	2	8	9	Franklin, Lee	Typhoid Fever	0	0	0	
mononucleosis	13	93	130	Black Hawk, Dickinson, Story, Warren, Winneshiek, Woodbury	Venereal diseases				
Influenza, lab confirmed	1	110	67	Scott	Gonorrhea	210	1016	1516	Scattered
					Chlamydia	406	2146	1772	Scattered
					Syphilis	2	12	11	Polk, Woodbury
					Other Non-Reportable Diseases: Clonorchiasis — 1, Muscatine; 1, Polk; Ureaplasma Urealyticum — 1, Linn.				



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About Iowa Physicians

Dr. Dennis Murphy, Sheldon, has joined a medical clinic in Hutchinson, Minnesota. Dr. Murphy practiced medicine in Sheldon for 9 years, most recently at Sheldon Family Practices. **Dr. Francis Conway** has joined the medical staff of the Northwest Iowa Mental Health Center in Spencer. Prior to joining the Center, Dr. Conway was in family practice for 20 years in Emmetsburg. **Dr. Glenn Skallerup**, longtime Red Oak general surgeon, has retired after 35 years of practice. Dr. Skallerup received the M.D. degree from the U. of I. College of Medicine and interned at Cincinnati General Hospital, Cincinnati, Ohio. **Dr. Ronald Myrom** has joined the medical staff at the Gundersen Clinic-West Union. Previously Dr. Myrom was the director of the intensive care unit and internal medicine at the Davis County Hospital

in Bloomfield. **Dr. Henry Snead** has joined the Des Moines Medical Group. Dr. Snead practiced internal medicine at Grinnell General Hospital for 4 years. **Dr. Anthony Leo** has joined the staff at Mercy Hospital of Franciscan Sisters, Oelwein and Palmer Memorial Hospital, West Union. Dr. Leo received the M.D. degree from the U. of I. College of Medicine and served his general surgical residency at Iowa Methodist Hospital in Des Moines.

Dr. Charles L. Baumgart, **Dr. Joan G. Mahn** and **Dr. Robert H. Major** have opened West Grand Medical Associates in West Des Moines. **Dr. Bernard Fallon** has been appointed as the chief of urology services at Iowa City Veterans Administration Medical Center. **Dr. Eyad**

(Please turn to page 386)

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Dughly has joined the staff of Covenant Medical Center in Waterloo. Dr. Dughly received the M.D. degree from the University of Damascus in Damascus, Syria and completed residencies in West Germany and Pennsylvania. **Dr. Hormoz Rassekh**, Council Bluffs, has been re-elected chairman of the board of directors of the Federation of State Medical Boards of the United States at the Federation's annual convention. **Dr. Thomas M. Gary**, Cherokee, was honored by the Iowa Public Health Association for his local contributions to public health. Dr. Gary was awarded the Henry Albert Memorial Award at the Association's annual awards dinner in Des Moines. **Dr. W. W. Taylor** has retired after 42 years as a physician and surgeon for Sheffield. Dr. Taylor received the M.D. degree from the U. of I. College of Medicine and took his internship at Good Samaritan Hospital in Portland, Oregon. **Dr. E. E. Linder** has retired from family practice after 35 years at Ogden. Dr. Linder received the M.D. degree at the U. of I. College of Medicine and practiced for 9 months in Eldora before settling in Ogden.

Deaths

Dr. Willard Marble, 83, Marshalltown, died May 30 at Boulder, Colorado. Dr. Marble received the M.D. degree from the U. of I. College of Medicine and interned at Charity Hospital in New Orleans, Louisiana. He practiced medicine in Marshalltown for 41 years before retiring in 1976 and co-founded the Marshalltown Medical & Surgical Clinic. Dr. Marble was a life member of the Iowa Medical Society.

Dr. Howard H. Hildebrand, 70, Ames, died June 13 at Mary Greeley Medical Center in Ames. Dr. Hildebrand received the M.D. degree from the University of Nebraska College of Medicine in Omaha, Nebraska. He was a pediatrician at McFarland Clinic in Ames for 38 years before his 1984 retirement. Dr. Hildebrand was a member of the Iowa Pediatric Society and the Iowa chapter of the American Academy of Pediatrics.

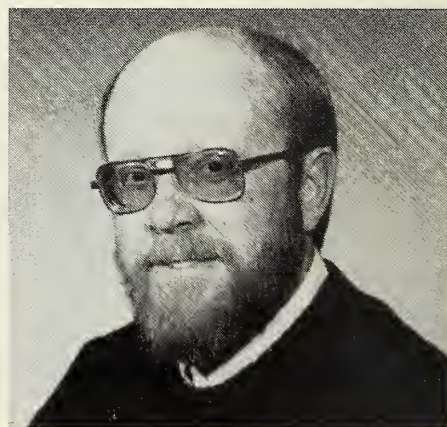
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An AMA Mission

AS ANYONE WHO READS or watches television knows, the American Medical Association is a recognized leader in identifying key public health issues and defining policy on those issues. This AMA tradition of concern for Americans' good health was once again in the spotlight at the AMA's Annual House of Delegates meeting in late June.

What follows is a brief recap of the many public health resolutions considered and acted upon by physician AMA delegates from across the country, including 5 Iowa physicians.

DRUG ABUSE . . . The AMA will urge the federal government to increase the number of drug treatment programs and upgrade present programs to educate adolescents about harmful effects of drug abuse.

ALCOHOL WARNING INFORMATION . . . The AMA will investigate the possibility of requiring warning statements and warning language on alcohol products and advertising.

SMOKING . . . The AMA will encourage all airlines to adopt a non-smoking policy on all domestic passenger flights. The AMA will also investigate the effectiveness of smoking cessation programs and publicize such information.

STEROIDS . . . The AMA will strongly support development of state legislation to prohibit use of anabolic steroids for the purpose of enhancing athletic ability.

'LOOK-ALIKE' GUNS . . . The AMA will work with civic groups and others to ban production, sale and distribution of realistic toy guns.

TANNING PARLORS . . . The AMA will undertake public education about the risks of ultraviolet A radiation exposure through skin tanning beds. The AMA supports new state regulation of tanning parlors and more en-

forcement of current regulations. The AMA will support legislation requiring posting of health risks in tanning parlors.

MAMMOGRAPHY . . . The AMA supports screening mammograms at 1-2 year intervals for women age 40-49 and annually after age 50.

MEDICAID . . . The AMA is asking that the federal government increase the number of those eligible for Medicaid from 19 million to 46 million in order to meet the health needs of more poor Americans.

AIDS . . . To stop the spread of the virus, the AMA recommends all states initiate contact tracing. The AMA has reaffirmed its policy that doctors should warn partners of AIDS virus carriers they may be at risk if patients or state authorities refuse to do so.

MEDICARE . . . The AMA strongly supports continued expansion of state societies' voluntary Medicare assignment programs to meet the health care needs of low-income elderly.

ADOLESCENT HEALTH . . . The AMA House received and will publicize a lengthy 'white paper' covering key aspects of adolescent health, including an analysis of socioeconomic factors which contribute to adolescent health problems. Delegates considered a number of resolutions regarding child abuse, school-based health programs and other issues.

Since the AMA's inception in 1867, the 'betterment of public health' has been one of its most important stated objectives. Obviously, the AMA is continuing its mission to actively educate physicians and patients about important public health issues.

August 1988

Iowa Medicine

Daniel M. Youngblade, M.D.

President's Privilege



A Generation in Crisis


THE BEGINNING OF A NEW school year is a good time to remind physicians of the opportunity and obligation they have to interact with school age patients. Sadly, this segment of society reflects a dismal picture in the areas of depression and suicide, drug and alcohol abuse, sexually transmitted disease, traumatic injuries, homelessness and abuse of all types. The medical advances that have improved the health and well-being of other population groups have failed to achieve similar advancements for adolescents. Both mortality and morbidity rates for adolescents are 11% higher today than they were 20 years ago.

As physicians, we have contact with young people through sports physicals, pre-school and school examinations and regular checkups. These situations present a wonderful opportunity for us to teach through good example, to be a part of an educational experience that points our youth down a road toward a healthy and worthwhile adulthood.

Experts predict that, within 10 to 15 years, medicine and the sciences will no longer attract the best and the brightest among our young people. Since physicians are educators, we must begin directing these young people back toward sciences, humanities and specialized technical training. We need to rekindle their interest in medicine, nursing, research activities and other sciences. Talking with these students and

showing love and concern for their welfare is a very important thing for physicians to do. Just as important is presenting ourselves as positive role models when we have contact with school age children.

The beginning of a new school year isn't only for the young. We physicians must remember the importance of keeping abreast of changes in medicine through refresher courses pertinent to our practices. We also must stay involved with all the many outside aspects of the rapidly changing field of medicine. This means involvement with organized medicine — the efforts of the IMS and AMA in dealing with the government and other third party groups who continue to erode the practice of medicine. Tort reform, legislative edicts, the ever-expanding ancillary care people attempting to practice medicine without proper training and credentialing — these are issues which demand physician involvement and education so we may continue our role as advocates for patients' health and well-being.



Daniel M. Youngblade, M.D.
President

School Health Services: Past, Present and Future

DON C. GREEN, M.D.
Des Moines, Iowa

The author gives a brief history of the Des Moines public school health service program, the present scope and the future of the program and how this relates to school health projects of the entire state.

THE PURPOSE OF A HEALTH service department in any school system is to optimize the students' health permitting them to benefit from the educational process to the fullest. Simply put, healthy children learn better.

The health service department of the Des Moines Public Schools began in 1907 when the first nurse was hired at the direction of the Des Moines school board. The real impetus, however, came when Fred Moore, M.D., a Des Moines pediatrician, became the first medical director in 1917. He instituted a program to immunize indigent students and gave direction to the entire school health delivery system. He acted as

medical director until 1941 and was responsible for giving the Des Moines Public Schools one of the most progressive school health programs in the country.

In the 32 years I have been associated with the Des Moines Public Schools, many changes have occurred. We now attempt to utilize the medical community to the fullest; not only to perform physical examinations on students and staff but to become involved as resource people, give classroom lectures, serve as athletic team physicians and other services as needed. Many physicians volunteer their time and expertise in these endeavors. I'm sure this is also true in many other Iowa communities.

In the Des Moines Public Schools, there are 34 nurses, 32 of whom have either a bachelor's or master's degree. There are 4 school nurse practitioners in our schools and we are the only school system in Iowa to use them. We were the second school system in the United States to have school nurse practitioners.

The scope of the school nurses' duties has broadened markedly since the first nurse was hired in 1907. The nurses now serve as resource people for students and staff regarding health problems, teach classes, give counseling and supervise numerous health screening programs. Specialty nursing service is provided to the multiple handicapped, the behavior disabled and other special education children in the system.

The school nurses in our system are responsible for teaching sex education and, I

Dr. Green is a family practice physician and medical director for the Des Moines Public Schools.

believe, account considerably for the low rate of pregnancy in the sixth through twelfth grade student population. The pregnancy rate in the Des Moines Public Schools is 3% compared to a national average of 10-11%. When pregnancy does occur, prenatal classes are taught at Des Moines alternative high schools and a nursery is provided following delivery so students may continue their education.

The school nurse practitioners have filled a big gap that existed in health delivery in our schools. They perform examinations on children whose parents cannot or will not have the examinations performed by a physician. I am sorry to say that even in our affluent society, the only contact many children have with health care professionals is in the public school setting.

We have a captive audience in schools from kindergarten through twelfth grade. It is my opinion we could accomplish much more if there were greater cooperation between the education and medical professions. The public school setting offers a golden opportunity to teach healthy behavior. No other community setting ever approximates the educational opportunity to reach children during their impressionable years. Let's take advantage of it as concerned medical people and responsible citizens. Health should be as much a part of the curriculum as the "three R's."

Future school health programs must be more comprehensive than programs that exist today. The continued increase in teen pregnancy, drug abuse, sexually transmitted diseases and certainly the increasing threat of AIDS in our society, underline the public schools as our best opportunity to reach those most vulnerable.

There is more public demand for health care delivery in schools. Several school systems in our country have clinics in the schools staffed by nurses, nurse practitioners, physicians assistants and a few physicians. These clinics counsel, treat minor illnesses, dispense birth control meds and devices and in general, fill in the gaps that are presumed to exist in our present health delivery system. I feel this approach is unwarranted if physicians become involved with local school health care, along with a team of parents and school administrators.

School health is a shared responsibility and it is important for you to be involved. Every school health program can be improved. It seems we have reached that time when the promotion of health and wellness is dependent more on what individuals learn to do for themselves than what others do for them. What an opportunity to use our educational system!

Summary

This article outlines information I have gleaned in 32 years of experience with the Des Moines Public Schools. There is more and more demand for school administration to develop comprehensive school health programs. Iowa physicians are urged to become involved in establishing a school health team in their communities and take advantage of a captive audience to promote healthful living.

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Mandatory Training in Child Abuse

RANDELL C. ALEXANDER, M.D., Ph.D.
Iowa City, Iowa

On July 1, 1985, Iowa became the first state to require significant training in child abuse for mandatory reporters. The author discusses training options, focusing on a new videotape produced by the Iowa Medical Society.

FOR ABOUT 3 YEARS, Iowa has required training for mandatory reporters of child abuse. This article briefly reviews medicine's role in child abuse and current training options. In particular, a new videotape by the Iowa Medical Society, "Reporting and Identification of Child Abuse," is now available for physicians.

Medicine and Child Abuse

Traditionally, physicians have played an important role in awakening the public to the existence and enormity of child abuse. The identification of child abuse frequently depends upon the differentiation of accidental from non-accidental injuries, abnormal vs. normal variations and the normal sequence of developmental and physical

states. Although health professionals account for only 7% of child abuse reports in Iowa each year, their professional judgment is crucial in many other cases.

In the 19th century, Tardieu determined a number of children he saw for various injuries were in fact victims of child abuse.¹ However, child abuse went largely unrecognized until the middle of the 20th century. Caffey in 1946 described the association of subdural hemorrhages and long bone fractures as one of inflicted trauma rather than a metabolic condition such as vitamin C deficiency.² (Legend has it that in his article Caffey tried to suggest parents were sometimes responsible for the inflicted trauma but the journal editor dismissed this as unthinkable.)

Meanwhile, other professional disciplines failed to identify or understand the child abuse problem. In 1962, Dr. Henry Kempe coined "The Battered Child Syndrome."³ The resulting explosion of interest in child abuse was contributed to in large part by Kempe's work. Clinical study and research on physical abuse began in the 1960's. Serious study of sexual abuse began in the late 1970's, aided by the advent of colposcopy. Emotional abuse has not yet been addressed with the same intensity through research or specific legislation. Greater understanding of child abuse has been spurred primarily by medical concerns and developments.

Although initially slow to respond, the American Medical Association recently published guidelines regarding identification of child abuse.⁴ Various medical societies are

Dr. Alexander is an assistant professor in the pediatrics department of the University of Iowa Hospitals and Clinics.

TABLE 1
CHILD ABUSE TRAINING OPTIONS

	<i>Advantages</i>	<i>Disadvantages</i>
Lectures	Quick to organize Easy to alter Questions easily answered	No option for review Group-paced Rarely tested for comprehension Lecture "burn out" with repetition
Manuals	Easy to review, even years later Self-paced, schedule at convenience Test for comprehension Expert need not be present	Difficult to get questions answered Moderately difficult to alter Hard to produce
Videotapes	Self-paced, schedule at convenience Review with minimal difficulty May have associated comprehension test Expert need not be present	Difficult to get questions answered Very difficult to alter Moderately hard to produce well

developing guidelines and including child abuse within conference training.

Several distinct medical syndromes have been described in child abuse. Although uncommon, physicians in Iowa are becoming increasingly aware of the manifestations of Shaken Baby syndrome and Munchausen by Proxy. Unfortunately, Department of Human Service Investigators and the courts are less aware of these discoveries. Frequently, training programs for social workers, psychologists and teachers do not address the basic issues of physical injury, much less specific syndromes.

Mandatory Training

On July 1, 1985 Iowa became the first and only state to require significant training in child abuse for mandatory reporters. All mandatory reporters, except physicians who do not regularly provide primary care to children, are required to receive 2 hours of training in the identification and reporting of child abuse within the first year of employment and every 5 years thereafter. Exactly how this is to be accomplished is not specified nor are there explicit penalties for failing to receive training. In an informal opinion to the Iowa Chapter American Academy of Pediatrics, the Iowa attorney general's office discussed the possibility of a physician brought into court for failing to discharge child abuse responsibilities. Under such circumstances, an inability to document child abuse training could conceivably result in increased civil and punitive damages.

An additional aspect of the training law is that employers must provide child abuse training to employees. Every hospital, school, day care center, and even an internist in private practice, must provide a mechanism for child abuse training to mandatory reporters they employ. Every physician in Iowa who employs nurses, psychologists, paramedics or social workers is responsible for their training even if the physician does not regularly provide primary care to children or have to take the training himself.

Training Alternatives

Three methods of training in child abuse have been employed in Iowa. Lectures were the initial vehicle followed by videotapes (frequently made of a lecture). A third alternative — written materials — was slower to develop. The advantages and disadvantages of each training method as it has been used in Iowa, can be seen in Table 1. Certain situations favor one method over another. For example, a rural physician will more likely find enduring materials such as a manual or videotape more convenient and economical than travelling to a conference to satisfy the 2-hour training requirement. A videotape or lecture, with sufficient time for questions at the end, may be appropriate for training medical students or residents.

Lecturers are often used for training. The expertise of the speaker and the quality of the lecture may vary. Mandatory report-

(Please turn to page 408)

ers such as teachers or social workers may not be adequately exposed to the medical aspects of child abuse. No statewide resource is available to coordinate speakers. The fact the training must be repeated at regular intervals has proven exhausting for guest lecturers such as Department of Human Services social workers. One of the earliest videotapes was created by the Iowa Law Enforcement Academy. Originally planned as a quick temporary solution, the use of this videotape has persisted despite the tape's technical flaws. Other videotapes have been made by several hospitals, schools and area education agencies. The quality of these efforts has usually compromised their widespread acceptance.

In response to these problems, the Iowa Medical Society commissioned the making of a videotape directed toward physicians through the cooperation of the Department of Communications at the University of Iowa. This videotape has 4 parts: physical abuse, sexual abuse, neglect and selected syndromes, and reporting. Each part is approximately a half hour long and may be viewed separately. This videotape can also serve as a teaching tool for residents or medical students. Because the videotape is aimed at physicians, it is inappropriate for nurses or other mandatory reporters. The tape is now available through the IMS to physicians or hospitals. In addition, the University of Iowa sponsors 2.0 hours of continuing medical education credit for persons who review the videotape and successfully complete a review quiz in an accompanying booklet.

A manual entitled "Protecting Iowa's Children" was offered through the Institute for Child Behavior and Development at the University of Iowa. This manual was field tested extensively. It proved to increase long-term knowledge and result in positive attitude shifts.⁵ The manual was directed toward all mandatory reporters although subsections focused on information for medical personnel. The first edition is now out of print and the future for a second edition is uncertain.

Conclusions

Currently, the IMS videotape is one of the most practical options for physicians re-

quired to receive training in identification and reporting of child abuse. To document their training, physicians can obtain CME credit at a relatively nominal cost (\$10.00). Convenient options for employees of physicians or hospitals are not as plentiful. Development of written materials may alleviate this problem. As of July 1, 1988, mandatory reporters of dependent adult abuse must also receive 2 hours of training. A provision exists for combining training in child abuse and dependent adult abuse. Efforts are under way to clarify exactly how many hours of training are required when the 2 are combined. Because many principles of child abuse pertain to dependent adult abuse — especially the reporting procedures — supplementation of existing child abuse training materials should prove sufficient for family physicians and some pediatricians and internists who work with children and adults.

Resource Materials

Iowa Medical Society Videotape
Reporting and Identification of Child Abuse
Iowa Medical Society
1001 Grand Avenue
West Des Moines, Iowa 50265

Law Enforcement Academy Videotape
c/o Tom Spencer
Law Enforcement Academy
P. O. Box 130
Camp Dodge
Johnston, Iowa 50131

Training Manual

Protecting Iowa's Children
Institute for Child Behavior and Development
University of Iowa
Oakdale, Iowa 52319

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Carol Hinton, R.N., B.S.

Questions and Answers



School Nurses Have Multifaceted Role

The author, a school nurse for the West Des Moines Community Schools, describes the role of the school nurse as manager of a comprehensive school health services program.

What are the duties of a school nurse?

The role of the school nurse is multifaceted. The school nurse is manager of a comprehensive school health services program. In this capacity, the nurse participates in developing and implementing school health policies and procedures. The school nurse collaborates to plan, implement and evaluate the school health program.

In delivering health services, the school nurse assesses and documents the health and developmental status of students. The nurse identifies specific health conditions which can impact learning and interprets these conditions for education personnel. The nurse also participates in developing and maintaining a safe and healthy school environment, prevents and controls the outbreak and spread of infectious and communicable disease and provides primary and emergency care to minimize

the effects of accidents and illness in the schools.

What is the school nurses's role in health education?

The school nurse identifies health education needs and acts as a consultant and resource to faculty in planning, implementing and evaluating the health curriculum. The nurse helps plan, implement and evaluate staff development programs in health education and provides health education to students, families and school personnel.

The school nurse is a health counselor. Through individual and group health counseling, students, families and school personnel are encouraged to assume responsibility for health care and a healthy lifestyle. The nurse advocates the health rights of children within the school system and the community. The nurse provides crisis intervention, initiates the health referral process and serves as liaison between school, home and community.

What new situations are school nurses facing?

Increasing numbers of students require specialized nursing care during the school day.

(Please turn to page 410)

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

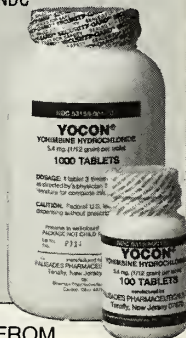
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Nasal-gastric tube insertion, removal and feedings; gastrostomy insertion and feedings; catheterization; postural drainage and suctioning are procedures frequently performed by the school nurse.

Students may have medical support such as mechanical ventilators, mechanical pump feedings, TPN and oxygen. To meet the health care needs of these students, the registered nurse collaborates with others to plan, implement and evaluate health care. The nurse is responsible for assessing the student and developing an individualized nursing care plan.

What should be the relationship between the school nurse and the physician?

The physician has a significant role and responsibility in the early detection and management of the child with impaired learning ability. The school nurse is a health professional who can collaborate with the physician, student and family to provide optimum health care and enhance the educational process. It is helpful if the nurse can communicate directly with the physician. The nurse may request written documentation of medical conditions and orders for special health care procedures.

Schools encourage parents to give medication and perform health care procedures outside school hours. Physicians can explore with the parent the advisability of a schedule that can be carried out before and after school. The physician may request 2 containers if a prescription medication must be administered at home and at school. Health care of the school age child is a responsibility of the parent.

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Child Abuse in Polk County: Investigation Results and Injury Patterns

CHRISTOPHER J. ELLERBROEK, M.D.

Des Moines, Iowa

Over an 18-month period, a multi-disciplinary team documented 143 cases of child abuse in Polk County. Fractures were found in 55 cases, predominantly infants. Fracture patterns and common radiographic features of abuse are discussed.

CHILD ABUSE IS ONE of the most common causes of significant childhood morbidity and mortality. Since 1962, when Dr. Kempe first coined the phrase "battered child syndrome," our awareness of the pervasive nature of the problem has increased dramatically.¹ Current estimates suggest as many as 5,000 children nationally are killed each year by their parents. As many as 10% of all emer-

gency room visits for children under 5 are for non-accidental trauma.² Significant contributions to the study of child abuse come from the field of radiology. This report details 18 months of child abuse investigation in Polk County. The role of radiology within the investigation and common radiologic findings are discussed.

Methods and Results

In February 1986, a special investigative team was formed in Polk County in response to growing concerns about child abuse. The team included representatives of the county attorney's office, juvenile court and child protective services. All cases were staffed with a team of consulting physicians from Blank Children's Hospital. The intent was to develop a multi-disciplinary approach to safeguard the child during the acute crisis and allow for gathering of information. Information presented here was taken from questionnaires attached to each case report, filled out by the case worker. Patient identity was confidential.

During the first year, 83 cases of suspected abuse were investigated (Table 1). Of these cases, 69 were felt to be non-accidental. An additional 6 months work revealed a total of 143 cases of suspected abuse. The age distribution of these cases is seen in Table 2; the

Dr. Ellerbreek is a radiologist at Iowa Methodist Medical Center in Des Moines.

TABLE 1
SUSPECTED ABUSE CASES

Bruises/Instrument Marks	25	
Fractures	22	
Head Trauma	10	
Burns	13	
Other	<u>13</u>	
	83	
Accidental	16	(19%)
Nonaccidental	67	(81%)

TABLE 2
AGE DISTRIBUTION OF ABUSE CASES

Under 6 Months	35	(24%)
6 Months–1 Year	9	(8%)
1–2 Years	27	(19%)
Over 2 Years	72	(49%)

TABLE 3
DISTRIBUTION OF FRACTURES

Under 6 Months	38	(69%)
6 Months–1 Year	4	(7%)
1–2 Years	7	(13%)
Over 2 Years	<u>6</u>	(12%)
	55	

TABLE 4
FRACTURE ANALYSIS

Age	Extremity	Skull	Rib	Multiple	CNS
Under 6 Months	21	10	6	9	5
6 Months–1 Year	3	1	—	—	—
1–2 Years	5	2	—	1	—
Over 2 Years	5	1	1	—	1
Total	34	14	7	10	6

TABLE 5
STANDARD RADIOGRAPHIC SURVEY

AP and Lateral Skull
AP and Lateral Spine
Chest
KUB
AP Hands
AP Feet
Extremities — Tailor for Age

majority were over 2 years old. Radiographic survey of the abused child was obtained whenever possible. The exam varied from a single view (the so-called "babygram") to a comprehensive multi-film study.

Of the 143 cases, 55 children with fractures were identified. Although infants constitute a minority of reported cases, they actually comprise a large majority (76%) of documented fractures (Table 3). Analysis of fractures by age and site is given in Table 4; extremity fractures accounted for 62%. Rib and skull fractures were largely limited to the youngest age group.

Discussion

Since 1946 when Dr. Caffey described children with long bone injuries associated with subdural hematomas, the medical community has gradually accepted the battered child syndrome and slowly became aware of its prevalence.³ In a multi-disciplinary approach to child abuse, radiology plays a key role in detecting and documenting injuries. The appearance of the injury also gives critical information regarding the mechanism and date of the injury. However, proper techniques are crucial if the often subtle findings of abuse are to be discovered.

The standard radiographic survey obtained in all cases of suspected abuse at Iowa Methodist Hospital is presented in Table 5. The policy of examining the younger child with a single large film is inadequate. In at least 6 instances, we encountered skull or rib fractures missed initially because of improper technique. Experience at Duke University suggests as many as 40% of infants examined comprehensively will be positive and that 20% of the injuries discovered will be unexpected.⁴

The majority of skeletal injuries from abuse occur in the extremities, followed by the skull and rib cage.⁴ While they are the most frequent, diaphyseal injuries are the least specific. Correlation of the fracture appearance with the reported history may raise suspicion: spiral or oblique fractures result from twisting of the extremity or less frequently from falls, while transverse fractures usually result from direct blows.⁵ Periosteal new bone may be the only clue to an underlying injury; its observation on a skeletal survey, particularly if asymmetric or unsuspected, is presumptive evidence of abuse.

The pathognomonic injury of child abuse is the so called "corner fracture," (Figure 1). This fracture was originally thought to be due to avulsion of a collar of bone at the tightest point of attachment by the periosteum.⁶ Histopathologic correlation suggests the injury actually represents a series of microfractures occurring in a planar fashion through the most immature portion of the primary spongiosa.⁷ The injury most commonly results from forceful twisting or yanking of the extremity, although it can result from flailing about of the extremity during bouts of violent shaking.

Skull fractures are common and occur largely in the youngest age group. Cranial injuries from accidental trauma in infants, excluding motor vehicle accidents, are surprisingly infrequent and rarely result in significant injury.⁹ Accidental skull fractures are usually solitary, parietal and non-displaced, while abuse related injuries tend to be multiple, bilateral, diastatic or non-parietal.¹⁰ Potentially devastating intracranial damage may result, often without evidence of a fracture. Subdural hematomas and contusions are common in the abused child. In addition, the large infant head, weak neck muscles and myelination patterns render the infant brain susceptible to hemorrhages at the grey-white interface secondary to rotational forces applied during violent shaking. This is the classic "whiplash shaken infant" described by Caffey and reviewed by Dykes.^{11, 12}

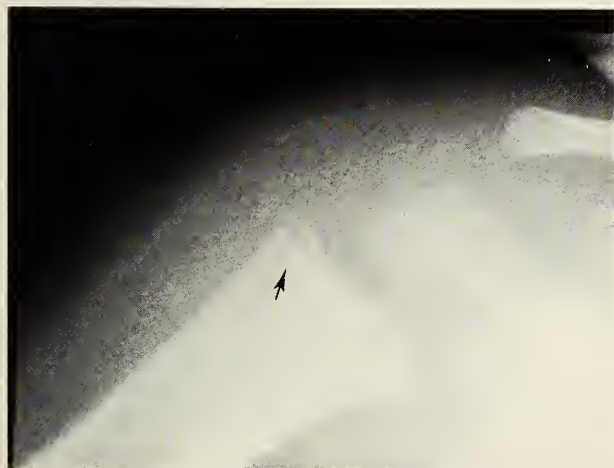


Figure 1. The "corner fracture," a pathognomonic child abuse injury resulting from twisting or yanking of the extremity.

TABLE 6
DISPOSITION OF 69 ABUSE CASES

4	Deaths
31	Confessions
30	CINA's FILED WITH CHILDREN REMOVED
11	CINA's FILED WITHOUT REMOVAL
15	CRIMINAL CHARGES
8	Plead Guilty
4	Found Guilty
2	Dismissed by County Attorney
1	Pending

CINA = Child in Need of Assistance Petition

Rib fractures almost invariably occur from squeezing of the chest, usually accompanied by shaking. Rib injuries are quite rare in infancy, even from CPR, and in the absence of obvious major trauma or bony metabolic disease, are specific for abuse.¹³ They most often occur in a posterior, vertically oriented row close to the spine. Because shaking so often accompanies this injury, every child with an unsuspected rib fracture should be evaluated for CNS injury.

Has this multi-disciplinary approach been effective in breaking the well described cycle of abuse? The disposition of the first 69 cases is seen in Table 6. The fact that services were provided or the perpetrator removed in 65 of 67 cases is strong testimony for the value of this approach. The ultimate success of treatment of these children is an unknown involving broad legal and psychosocial considerations. With the recidivism rate for abuse as high as 50%, early intervention is needed.² This depends upon prompt reporting of suspected cases, as state law requires of physicians. Eighty-nine of the 143 cases of abuse were initially disclosed by mandatory reporters. Nineteen were seen previously by a physician for the same injury or a separate but suspicious injury prior to the actual filing of the report.

Child abuse remains a distressingly frequent occurrence within our society. As part of a multi-disciplinary team approach, properly performed radiography can serve a valuable, well documented role.

References

References noted in this article are available either from the authors or the editors of *IOWA MEDICINE*.

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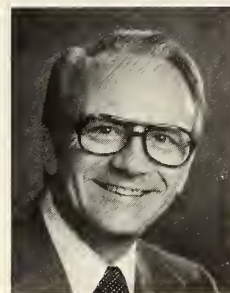
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The Editor Comments



School Health Our Concern

A SMALL NUMBER of physicians are trained for the role of providing services in our schools. In earlier years, physicians involved with school health problems were primarily concerned with performing cursory physical examinations, advising on isolating children with infectious diseases or providing care for an occasional acute problem.

Today, day-to-day concerns within the school are handled very well by a trained nurse practitioner and the physician serves as part of a team of health providers and educators which is responsible for a wide variety of programs for the betterment of the entire education environment.

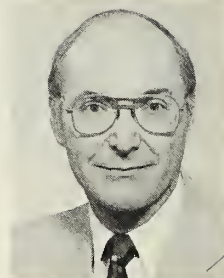
The "special" children require programs so they may be mainstreamed in the education process. In years past little was done for a child with handicaps. In fact, school authorities (educators and administrators) were uncomfortable having these children in the usual school setting. Unfortunately they were either poorly (if at all) educated or were sent away to special schools. In today's progressive and well-organized school systems there are facilities for the disadvantaged child. Programs for the hearing-impaired, the dyslexic or the child with motor handicaps give these children a chance for the same degree of education as their peers.

Learning disorders, psychosomatic problems and behavior deviants require special attention by school health workers and educators. There have been so many horror sto-

ries of the past management of such children, from total neglect to out-and-out discrimination and physical ostracizing. The total picture is of equal concern to the health personnel (school nurses, school physicians and the family physician), educators, the parents and school administrators (including members of school boards). Together, utilizing all resources available, a concerted effort can be implemented to provide truly integrated programs for good education for all children.

Too often the role of the school physician is perceived as supervising the physical status of those students participating in the various athletic programs. This is not a minor role, but school physicians have more responsibility than involvement with sports medicine. Our own medical society is guilty to some degree in this area. The IMS has a committee on "sports medicine" — but none on "school health." Presumably, the Committee on Maternal and Child Health becomes involved with school health. Obviously, that is not the primary mission of that committee, yet the athletic programs receive a much higher priority. I disagree with that concept.

School health — total school health — should be a primary concern for all physicians. Our efforts should be directed to assist in all facets of that concern as physicians, as parents and as members of parent-teacher associations. — M.E.A.



The Business of Medicine

A RECENT AD IN THIS JOURNAL, eager to sell computer software, justified itself this way: "Because the *business* of medicine is just as important as the *practice* of medicine. . . ." That assertion would make waves in a medical school curriculum committee. At the University of Iowa that committee determines which courses shall be taught, when, and for how much time and credit, and it oversees the progress of courses. The recurring argument contends that office management, personnel questions, equipment selection, paper flow, keeping employees and patients "happy," etc., are so vital to the work of physicians that medical schools should see to this instruction. Even if we could locate suitable instructors, a counter-argument would likely prevail.

To wit: timing largely determines educational effectiveness. In the instruction of adults the relevance of a topic to the learner's responsibility determines what the learner seeks to learn and how well she/he pays attention. This explains why many residencies in surgical disciplines begin with a vigorous review of pertinent anatomy, even though the aspiring specialist had a big course in it already. This time the learner retains the information much better because daily work constantly reinforces it. With such thoughts in mind many enlightened residency programs now make available to senior residents some business instruction.

In some disciplines the national specialty society provides it at the annual meeting.

No doubt the attractiveness of group practices, academe, and military medicine for some young doctors is partly the alleged lack of need to be involved in the business side of practice, so the doc can "stick to medical work." How one votes on this issue relates to how one defines medical work.

Most bright people seem to learn what they "must" to gain satisfaction or get along. Therefore, don't you imagine it was the doctor who wrote the following ad, without ever taking a course in how-to-do-it:

Dr. A. Wilson, M.D., homeopathic physician, will visit Nevada each Tuesday. Mrs. Wilson, his wife, being thoroughly prepared, will accompany the Doctor and consult with and prescribe for ladies, where they prefer it. Consultations free, but cash for all prescriptions.

You need fear no competition from Dr. Wilson (or his good wife for that matter, who comes perilously close to practicing medicine without a license), whose ad appeared in *The Nevada (Iowa) Representative* in 1874. The business side of medicine was much less sophisticated in those days. But I'm sure I'd not trade today for then, even though a handy fool-proof time machine to allow a visit might be fun. Lacking that device, we might gain almost as much vicarious delight by reading old documents. (I may later reveal why I was reading that newspaper — a story worth waiting for.)

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

Successful Marketing Focuses on Service

WHICH OF THE FOLLOWING describes marketing?

- An essential for success.
- Costs up to 3% of practice revenues.
- Already a part of your practice.
- Deserves more of your attention.
- Requires planning and direction.

The answer is all of the above.

You have been marketing your practice since opening the door. *Wall Street Journal* subscriptions you provide your best referrers, flowers you send to operating and emergency room nurses, candy you give ward nurses are examples of marketing. You participate in a marketing effort as a provider in an HMO or PPO. Talking to the Nurses Association and Rotary Club is marketing.

Marketing is the business system of coordinated activities that get want-satisfying services and products to current and potential consumers. It is not done apart from other business/practice activities. It is an integral part of the practice.

Your previous marketing activities have probably been spontaneously conceived and sporadically executed. Business survival (keeping patients and obtaining new ones) requires a different approach.

Traditionally, health care delivery was provider driven; you set the conditions for patient care. Today, delivery is market driven. Customers direct the when, where and, to some extent, the how of their health care purchases. They expect convenient hours and parking, pleasant surroundings, competent

and prompt attention and courteous caring service.

Answering some important questions will help you develop a practice marketing plan. What is your business? Who are your customers? Who is your competition? What services should you render? After you answer these questions, you can develop a plan to market your services effectively.

Keep your plan simple. Key on *servicing* your customers (be they patients, other physicians or third parties) with courtesy, convenience, caring and competence. Take notice of your employees and how they serve your customers. Your office receptionist is the first person your customers see. Are your employees customer-oriented?

The physician is the leader of the marketing team. You need to understand and support customer-centered as opposed to self-centered employee performance. Employees need to understand that customer-centered performance is mandatory, makes their work more pleasant and productive and relates to their compensation. Employees should be ambassadors of the practice.

There is more to obtaining a favorable employee attitude than expressing the wish. You may not have the time or expertise. Send your office supervisor to workshops and seminars on personnel motivation, management and public relations. There are also consultants in public relations and marketing.

You are in the service business and service is the focal point of your marketing efforts. Keep statistics on patient visits and acquisition of new patients. Occasionally ask your customers to complete a brief questionnaire. Pre-

(Please turn to page 422)

suming your employees have name badges (they should!), call a patient or 2 at the end of the day and ask which employee they found most courteous and helpful when they were in the office. Tell the employee and make a note to reward favorable behavior at the next compensation review.

Advertising is an element of marketing and belongs in your plan under certain circumstances. There are several means of advertising including direct mail and newspapers, radio and television. There are generally 3 situations that call for advertising:

- Introducing a new service (a new therapy or new partner).
- Cyclical revenues (July special on school physicals).
- Reinforcing consumer opinion (yellow page ad, telephone stickers containing office hours and emergency phone numbers).

Today, marketing is as essential as a medical records system. It requires planning, organizing and consistent execution. Successful marketing relies upon leadership from the top and a commitment to offering convenient, courteous, caring and competent service.

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AGENDA:

12:00 - 1:00 p.m.	Registration
1:10 p.m. - 2:00 p.m.	Fever of Unknown Origin
2:00 p.m. - 2:45 p.m.	Imaging Procedures In The Search Unknown Primaries
2:45 p.m. - 3:00 p.m.	Break
3:00 p.m. - 3:45 p.m.	Case Presentation, Panel Discussion
3:45 p.m. - 4:45 p.m.	Selected Topics in Pain Management
5:00 p.m. - 7:00 p.m.	Cocktails and Trip to Riverboat
7:00 p.m. - 8:00 p.m.	Spirit of St. Joseph Dinner and River Cruise
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Sexually Transmitted Diseases

In the spring a young man's fancy lightly turns to thoughts of love. Alfred, Lord Tennyson, Locksley Hall, 1842.

THE RECENT EMPHASIS on acquired immunodeficiency syndrome (AIDS) has at times overshadowed other sexually transmitted diseases. Yet, gonorrhea, syphilis and the other "classical" sexually transmitted diseases remain a very real problem in the United States. Some, like syphilis and chancroid, have shown an alarming increase in incidence. Others, like chlamydial infections, are difficult or expensive to diagnose and remain largely unchecked causing significant long-term complications. As a result, sexually transmitted diseases other than AIDS have retained their major role in morbidity and reproductive mortality in the United States.¹ This article reviews the current epidemiology, clinical presentation and treatment of infections due to *Neisseria gonorrhea*, *Chlamydia trachomatis*, *Treponema pallidum*, human papilloma virus, *Herpes simplex* virus and *Hemophilus ducreyi*.

Gonorrhea

Neisseria gonorrhea has infected man for centuries, and has a rich and fascinating history.² Many historical events have been shaped by this infection and this enduring disease has sparked the interest of generations of physicians.³ In one of the most famous medical experiments in history, John Hunter inoculated his own urethra with pus from a patient with presumed gonorrhea. Dr. Hunter developed both gonorrhea and syphilis and erroneously

concluded the diseases were one and the same.^{2, 3}

Gonorrhea is a reportable disease, and approximately 1 million cases are reported each year though many more go unreported.⁴ Gonorrhea was found in 8% of male college students with urethritis and 11% of unselected patients presenting to a clinic for sexually transmitted diseases.^{9, 10}

Most men exposed to gonorrhea develop a purulent discharge in 1 to 14 days. The discharge usually becomes copious and yellow to green in color and is associated with dysuria. Swelling of the glans may also occur. In about one fourth of men, the discharge may remain scant and watery.⁶ In less than 5%, the infection is asymptomatic.^{7, 8} However, asymptomatic carriers are not likely to receive treatment and therefore are disproportionately represented in the general population. Untreated gonococcal urethritis resolves over a period of weeks to months. A small proportion of untreated patients will develop epididymitis.⁴ Stricture of the urethra, common in the preantibiotic era, was related to caustic treatments and is rare today.

Symptoms in women are less specific and include change in vaginal discharge, intermenstrual bleeding, menorrhagia and dysuria. Many women have mild symptoms or are asymptomatic. Cervicitis may be noted on pelvic examination. Untreated gonococcal infection may lead to salpingitis and infertility.

Pharyngeal infection may occur and is usually asymptomatic. Anorectal infection may follow anal intercourse but may also occur in women with no history of anal contact.¹⁴

In some cases, gonorrhea may disseminate to cause joint infections, tenosynovitis, skin lesions and/or endocarditis. Disseminated gonococcal infection (DGI) is more com-

This article was authored by Mary D. Nettleman, M.D. and Gail L. Stanley, M.D., Division of Clinical Epidemiology Department of Medicine at University of Iowa Hospitals and Clinics. It was edited by John E. Kasik, M.D.

mon in women and has been associated with complement deficiencies.¹²

Diagnosis

Neisseria gonorrhea are small, gram-negative kidney-shaped cocci occurring in pairs. Culture is usually performed on selective media to prevent overgrowth of other bacteria and requires 24 to 72 hours.⁴ Gray or white colonies are identified as *N. gonorrhea* by their oxidase reaction, carbohydrate utilization and/or fluorescence when combined with tagged antibodies.

Rapid diagnosis in the outpatient setting is provided by gram stain of smears from urethral discharges. If gram negative diplococci are seen inside polymorphonuclear leukocytes, the smear is positive. If diplococci are seen extracellularly or appear to have atypical shapes, the smear is equivocal. In men with symptomatic urethritis, gram stain has a sensitivity of 90 to 95% and a specificity of 95 to 100%. In asymptomatic men and in women, the sensitivity falls to 50 to 70% though the specificity remains high.

Gonorrhea isolates have become progressively more resistant to penicillin. In 1976, completely resistant strains were isolated and found to contain a plasmid coding for the production of penicillinase. These strains were dubbed penicillinase-producing *Neisseria gonorrhea* or PPNG. In 1986, over 16,000 cases of PPNG were reported and many more went unreported.⁵ Laboratories should routinely test for production of penicillinase.⁵

More recently, chromosomally mediated resistance to penicillin and plasmid-mediated resistance to tetracycline has been documented. Chromosomal resistance to penicillin is usually associated with resistance to tetracycline and other antibiotics. A few cases of spectinomycin-resistant gonococcal infections have been reported in this country.¹⁴ Laboratories do not routinely test for chromosomal resistance, and the extent of the problem remains unclear.

Treatment

In areas where PPNG accounts for < 1% of isolates, oral or injectable penicillins may be used.⁵ The oral regimen is a one-time dose of amoxicillin (3 gm) or ampicillin (3.5 gm). Intramuscular aqueous procaine penicillin G (APPG) 4.8 million units may also be used. All

penicillin regimens should be accompanied by one gram of probenecid by mouth. AAPG, but not oral penicillins, is effective against pharyngeal infection and against rectal gonorrhea in patients practicing anal intercourse.

In areas where PPNG accounts for 1 to 3% of isolates, ceftriaxone 250 mg as a single intramuscular dose should be used if patient follow-up is expected to be poor or if local epidemics occur.⁵ Spectinomycin is an alternative, but is not effective against pharyngeal gonorrhea.⁴

In areas where PPNG rates exceed 3%, ceftriaxone or another effective medication should be used by all providers.⁵

In all cases of gonorrhea in heterosexuals, tetracycline or erythromycin should be taken for one week to empirically treat concurrent infections with *Chlamydia trachomatis*. Concurrent chlamydial infection is less common in homosexuals for unknown reasons and empiric therapy may not be warranted.¹³ Tetracycline is also effective in pharyngeal, urethral and cervical gonorrhea due to sensitive strains.

Chlamydia Trachomatis

It has been estimated 3 to 4 million chlamydial infections occur annually in the United States.¹⁶ Chlamydial infections are a major cause of infertility, salpingitis, ectopic pregnancy, neonatal infection and epididymitis.¹⁷⁻²⁴

Because *C. trachomatis* is a sexually transmitted pathogen, infection is more common in certain high-risk groups. The risk is 22% in men with gonorrhea, 37% in men with nongonococcal urethritis (NGU), 52% in women with gonorrhea, 44% in women with nongonococcal cervicitis and 24% in women with nongonococcal salpingitis.²⁵ Sexual partners of men with NGU or gonorrhea have a 36% and 40% risk respectively.²⁵ In contrast, only 5 to 9% of asymptomatic college women will be infected with *C. trachomatis*.²⁶

The signs of chlamydial infection differ in men and women. Infected men attending a sexually transmitted diseases clinic are symptomatic 75% of the time.²⁵ Symptoms consist of a urethral discharge (nongonococcal urethritis or NGU) and/or dysuria. The discharge may be minimal and the dysuria may be mild or nonexistent. As a result, patients often put up with their symptoms for a prolonged period of time before presenting to their physi-

cian. This delay, unfortunately, may allow more time for infection of sex partners and, in theory, puts the patient at higher risk for prostatitis and epididymitis. *C. trachomatis* is the primary cause of "idiopathic" epididymitis in men less than 35 years of age.⁴³

Primary infection in women is often asymptomatic. Occasionally, women may notice a change in the vaginal discharge, intermenstrual bleeding or menorrhagia. Cervicitis may be discovered on examination. Primary

'... sexually transmitted diseases other than AIDS have retained their major role in morbidity and reproductive mortality in the United States.'

infection may spread to cause pelvic inflammation and salpingitis. Pelvic inflammation may be mild and virtually asymptomatic or severe and accompanied by pain and fever. Scarring may occur resulting in infertility or increased risk for ectopic pregnancy. Sixty percent of women with involuntary infertility due to tubal disease and 20% of all women with infertility have serological evidence of chlamydial infection.¹⁸ Many complications are the result of asymptomatic infections which will not be brought to the attention of a clinician unless a screening test is employed. Less commonly, chlamydial infection may be associated with right upper quadrant pain caused by a perihepatitis or Fitz Hugh Curtis syndrome.²⁷ The exact incidence of long-term complications of uncured chlamydial infections is not known because patients identified as having chlamydial infections are treated immediately and the natural course of infection has not been historically defined.

Newborns may acquire chlamydial infection as they traverse an infected birth canal. Approximately 20 to 50% of infants born to infected mothers will develop conjunctivitis and another 5 to 20% will develop pneumonia.^{24, 28, 29} Up to one-fourth of those with pneumonia will require hospitalization.³⁰ Erythromycin or tetracycline drops instilled at

birth prevent chlamydial and gonococcal conjunctivitis.³¹ Silver nitrate eye drops do not prevent chlamydial conjunctivitis. Eyedrops do not prevent nasopharyngeal colonization or subsequent pneumonia and are less effective in cases where prolonged membrane rupture allows chlamydial infection to become established before birth.

Anorectal infection may occur in persons practicing rectal intercourse and is often asymptomatic.³⁰ Pharyngeal infection also occurs and is usually asymptomatic. Inclusion conjunctivitis may result from autoinoculation with infected genital secretions in the adult. Reiter's syndrome has been associated with NGU. Culture-negative subacute bacterial endocarditis is a very rare complication of chlamydial infection.⁴³

Diagnosis

Chlamydiae require a host cell to propagate and may only be grown in tissue culture.³² Nonwooden specimen swabs are used to obtain a specimen from the urethra or endocervix and placed in transport medium. The transport vial is agitated to liberate chlamydial particles and the suspension is used to inoculate vials or 96 well plates containing a monolayer of host cells. The culture is incubated for 72 hours. If no intracytoplasmic inclusions are detected, the host cells are disrupted and "passed" or reinoculated into a fresh monolayer. The passed culture is incubated for an additional 72 hours. Cultures are considered positive if typical intracytoplasmic inclusions are seen when the monolayer is stained with iodine, giemsa, or fluorescein-tagged monoclonal antibodies.

It has been estimated that a single endocervical cell culture has a sensitivity as low as 70%.^{34, 35} In other words, culture would be able to identify 70% of infected women and would be falsely negative in the remaining 30%. Sampling 2 sites, such as the urethra and endocervix, improves the sensitivity.³⁶ A rapid and very inexpensive method of improving the sensitivity of culture is to combine urethral and endocervical swab specimens in the same transport vial.³⁶ The specificity of culture approaches 100% and a positive culture is reliable proof of chlamydial infection.

It is important that adequate specimens be collected. Specimen swabs must be ob-

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tained from inside the urethra or contain endocervical cells in order to yield the highest possible number of organisms that live inside their host cells.³⁶ Simply absorbing an external urethral or vaginal discharge is not sufficient.

Culture is expensive, time consuming and requires tissue culture capability. Rapid, inexpensive diagnostic tests have been developed, but are not as sensitive or specific as culture.^{37, 41} Two types of tests predominate. In the first, the specimen swab is rolled on a slide. The slide is fixed and stained with a fluorescein-tagged antibody. Chlamydial particles are detected as fluorescent specks under a special microscope. The second test is an enzyme-linked immunosorbent assay (ELISA). The specimen is placed in medium and a tagged antibody is added. If chlamydial particles are present, the solution will change color in the presence of a developing agent. Results are read on a spectrophotometer. The sensitivity of the rapid tests compared to culture has been estimated to be 70 to 95% (e.g., the rapid test will identify only 70 to 95% as many infections as culture) and the specificity 90 to 98%.³⁷⁻⁴¹ False-negative and false-positive results are more common with rapid direct antigen tests than with culture.

Diagnosis of NGU requires only a gram stain of a urethral smear in a male. If more than 4 polymorphonuclear leukocytes (PMN) and gonococci are present per high-powered field are seen, the diagnosis of NGU is made and treatment is instituted. The presence of fewer PMNs does not rule out the possibility of sexually transmitted disease. NGU is a sexually transmitted disease caused by any of several organisms. Chlamydia is responsible for approximately 40% of NGU.

Treatment

Because chlamydial tests may be insensitive, the Centers for Disease Control has recommended empiric simultaneous antichlamydial therapy in high-risk patients including those with gonorrhea, NGU, cervicitis, and salpingitis and for the sexual contacts of these patients.¹⁶

Uncomplicated genital infection in men or women may be treated with 7 days of tetracycline (2 grams/day), erythromycin (2 grams/day), or doxycycline (200 mg/day) in divided doses.^{16, 42} Pregnant women who experience severe gastrointestinal symptoms on the full 2

gm per day regimen of erythromycin may be treated with 1 gm per day of erythromycin base and therapy continued for at least 2 weeks. Pelvic inflammatory disease is treated with at least 10 days of antichlamydial therapy in conjunction with cefoxitin, ceftriaxone or other approved antibiotic.¹⁶ Close follow-up is recommended for patients with pelvic inflammatory disease.

Because chlamydial infections are sexually transmitted, it is important all current sexual partners receive therapy concurrently.

'False-negative and false-positive results are more common with rapid direct antigen tests than with culture.'

Patients should be instructed to abstain from sexual intercourse during therapy and to avoid intercourse with untreated partners.

Syphilis

Syphilis has been an important pathogen in man for centuries. In 1897, Sir William Osler said that to know syphilis and its manifestations was to know medicine. Though its importance waned with its decreasing incidence after the discovery of penicillin, syphilis has been making an insidious comeback. The incidence of congenital syphilis has been rising since 1983.⁴⁴ In 1987, an increase of 32% in primary and secondary cases was noted.⁴⁵ Major increases in syphilis in heterosexuals occurred in California and New York City.

Syphilis is caused by the spirochete, *Treponema pallidum*. The disease may be acquired through sexual contact, contaminated blood products and transplacentally. Syphilis is divided into chronological stages and the choice of therapy depends on the stage of the disease. Congenital syphilis may occur if the mother is infected and may cause cutaneous, skeletal and mucous membrane lesions.

After sexual contact, an incubation stage exists for 1 to 6 weeks. During early incubation, the patient may be asymptomatic and serological tests may be negative. Primary syphilis begins with the development of a

chancre: a painless ulcer at the site of inoculation, often with raised margins. The chancre is usually solitary and is often accompanied by painless inguinal adenopathy (buboes). Although usually located on the genitalia, chancres may occur at any site including the mouth, breast, tongue, and fingers. In many cases, the chancre may not be noticed or may be ignored. It resolves in 3 to 6 weeks. Initial serological tests may be negative and dark-field examination of material from the chancre may not reveal spirochetes. A high index of suspicion and repeated serological tests are necessary for the diagnosis.

The protean manifestations of secondary syphilis appear in a few weeks to months.⁴⁶ A papulosquamous rash resembling "nickels and dimes" may appear, especially on the palms and soles. This is helpful because few rashes involve the palms and soles. Fever, malaise, headache and arthralgias may occur. Other manifestations include patchy, "moth-eaten" alopecia, eroded grayish patches over the mucous membranes, laryngitis, generalized lymphadenopathy and meningitis. Moist, intertriginous papules (condyloma lata) are more common in women and are very infectious. Serological tests are invariably positive during the secondary stage and titers may be quite high. Symptoms resolve in a few weeks, but may recur if the disease remains untreated. Patients then progress to the latent stages.

Not all infected patients manifest the signs and symptoms of secondary syphilis. Many enter the asymptomatic latent stage directly after the primary stage. In the first year, the patient is said to be in an early latent stage. Subsequently, the stage is referred to as late latency. Patients are asymptomatic and serological tests are positive but may have low titers. The fluorescent treponemal antibody absorption test (FTA-ABS) is more likely to be positive than the venereal disease research laboratory test (VDRL).⁴⁷

Years after the development of latency, the tertiary stage of syphilis may intervene. Symptoms may involve the central nervous system, the cardiovascular system or the musculoskeletal system. Neurosyphilis may be asymptomatic and manifested only by abnormalities of the CSF (predominately a pleiocytosis) or unrelated symptoms.⁴⁸ Based on a review of 241 cases, approximately 24% of patients with neurosyphilis will have some

type of seizure disorder, 12% will have ophthalmologic symptoms, 11% will have stroke or confusion-related symptoms and 2% will have personality changes.

On physical examination, pupils may be irregular and unequal and may accommodate but be unreactive to light (Argyll Robinson pupils). Symptoms of "general paresis" may evolve over several years and include psychiatric abnormalities, dementia, speech disorders, delusions of grandeur and general physical deterioration. Tabes dorsalis is uncommon and consists of pain, decreased deep tendon reflexes, paresthesias and Argyll Robinson pupils. Painless destruction of the joints (Charcot's joints) and ataxia may occur. Gummas are nodular lesions that often become necrotic and ulcerate and may occur anywhere in the body in the tertiary stages. Cardiovascular infection may lead to aortic insufficiency or aneurysm.

Diagnosis

No clinically available culture system exists for *T. pallidum*. Diagnosis depends on direct observation of spirochetes by dark-field microscopy or on serological tests. Chancres (especially if moist and active), mucous patches and bubo aspirates usually harbor organisms. A negative dark field may be a result of a paucity of organisms, an improperly collected specimen, or the absence of organisms. Negative dark-field examination does not rule out the diagnosis in an otherwise likely setting.

Two classes of serological tests are available. Nontreponemal tests measure reagin: a group of antibodies that recognize cardiolipin antigen. The rapid plasma reagin (RPR) and VDRL both contain the antigen. Nontreponemal tests are usually less expensive and require less expertise than the treponemal tests and are therefore in use as general screening tools.⁴⁹ False-positive tests may occur in febrile illnesses, during pregnancy, with some autoimmune diseases and in a variety of other conditions. The nontreponemal tests may be used to measure titrated responses. Although often negative after successful treatment, the tests may remain positive at low levels. A four-fold rise in titer is used to indicate reinfection. Nontreponemal tests are positive during approximately 75% of cases of primary syphilis and are virtually always positive at very high

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titers in secondary syphilis. In latent and tertiary stages, the titers fall and may become negative in 40% of patients.^{47, 48} A negative nontreponemal test does not rule out infection in latent and tertiary syphilis.

Treponemal tests detect antibodies directed against *T. pallidum*. The FTA-ABS is the most common treponemal test employed in the United States. The FTA is more sensitive than the nontreponemal tests and remains positive for life, even in patients treated successfully. False-positive results are rare, but may occur with autoimmune disease or narcotic addiction.

Treatment

Treatment depends on the stage of disease.⁵⁰ Primary, secondary and early latent syphilis should be treated with 2.4 million units of benzathine penicillin intramuscularly. Penicillin-allergic patients may take tetracycline (500 mg, 4 times daily) for 15 days. Occasional treatment failures have been reported in secondary syphilis.⁵¹

Late latent syphilis or syphilis of unknown duration should be treated with benzathine penicillin 2.4 million units intramuscularly once a week for 3 successive weeks. Neurosyphilis may be treated with the same regimen, but is more commonly treated with aqueous penicillin 12-24 million units IV/day for 10 days followed by benzathine penicillin 2.4 million units weekly for 3 doses.

Condylomata Accuminata (Genital Warts)

Genital warts are caused by human papilloma viruses (HPV). Their exact incidence is unknown, but the number of physician visits for condylomata accuminata has been increasing.⁵² Warts are seen as heaped up "cauliflower" lesions occurring in clusters on the genitalia or around the anus. No culture system for HPV exists and diagnosis is made by visual observation of the lesions. HPV may be detected by DNA probe hybridization. Commercial kits for HPV detection are currently under evaluation.

Treatment

Therapy is unsatisfactory. Painting warts with podophyllin is a common and easily available treatment, though retreatment is

commonly required. Podophyllin is caustic and must be removed within 4 hours of the first treatment. Liquid nitrogen has been topically applied to freeze warts. Multiple treatments are often required. Laser therapy is a recent innovation shown to be effective, but requires trained personnel and expensive equipment. A recent report suggests intact human papillomavirus DNA is present in the vapor produced by laser therapy and would technically pose a risk for infectious spread to health care personnel.⁵³ Large clusters of warts or warts located inside mucous membranes should be treated with cryosurgery or cautery. Natural interferon alfa has been reported to be of benefit, but is not yet in common use.⁵⁴

Infection with HPV may not always result in visible warts. Flat, asymptomatic lesions may occur on the cervix and may only be visible on colposcopy. HPV DNA sequences have been found in cervical neoplasia suggesting an undefined role in oncogenesis.⁵⁴⁻⁵⁶

Genital Infections Caused by Herpes Simplex Virus (HSV)

Genital infection with HSV has increased considerably in the past 2 decades. Because genital herpes is not a reportable disease, its exact incidence is unknown. In the United States, HSV is the most common cause of genital ulcers.⁵⁷ In developing countries, chancroid is often a more common cause of genital ulceration.^{57, 58} HSV exists as types 1 and 2, with HSV 2 being the most common cause of genital disease and HSV 1 being the most common cause of oral-labial disease (cold sores).

The virus is transmitted through intimate contact with an infected source. HSV is inactivated by cool temperatures and desiccation. Nonvenereal spread of the virus through hot tubs or moist surfaces is unlikely and has not been documented.⁵⁹ The initial or primary episode is usually much more severe than subsequent recurrences. Primary genital herpes is characterized by systemic symptoms such as fever, myalgia, headache and malaise. Symptoms of aseptic meningitis may be more frequent in women.⁶⁰ Painful vesicles erupt in the genital area and persist for 10 days to 2 weeks.⁶⁰ Involvement of the urethra or anus may cause significant problems with urination and defecation. Tender, nonsuppurative inguinal adenopathy occurs in up to 80% of primary infections, often presenting late in the course

and resolving slowly.⁶⁰ Erythema multiforme may develop in a minority of patients. Autoinoculation during primary disease may result in extragenital lesions, particularly on the buttock, lip, finger, breast and eye.⁶⁰ Rarely, the disease may disseminate. Primary genital infection with HSV 1 is less common and milder than genital infection with HSV 2. Patients with serum antibodies to HSV 1 or to HSV 2 also appear to have fewer symptoms during the primary attack.

More than 80% of patients with primary infection with HSV 2 will experience a recurrence in the first year.^{61, 62} Patients infected with HSV 1 have only a 50% probability of recurrence.^{61, 62} Recurrent disease is much milder than primary disease and symptoms are localized to the genital area. Dysethesias, itching or pain may precede the eruption of the vesicles that persists for 8 to 12 days.⁶⁰ Despite many studies, predisposing causes of recurrences have not been defined. Additionally, recurrences may be erratic: occurring monthly for a period and then regressing to only a few times per year.

Asymptomatic viral shedding may occur in the absence of vesicles, and the disease may be transmitted during this phase.⁶³ Asymptomatic shedding is particularly worrisome in pregnant women. More than half of pregnant women who carry HSV have been shown to be asymptomatic at the time of viral shedding. Virus shed into the birth canal at the time of delivery may result in neonatal herpes infections. Neonatal disease is most common in women experiencing their first episode of infection: up to 40% of such infants may acquire neonatal disease.⁶⁴ Babies born to women with active, recurrent disease have a lower risk of neonatal disease.

Diagnosis

Genital herpes infection is often diagnosed solely on clinical grounds in the United States. The occurrence of clustered, painful vesicles in a sexually active adult is the hallmark of herpes. In contrast, syphilitic ulcers are usually solitary and nontender. Though chancroid is a cause of painful genital ulcers, it is less common in this country and may be associated with suppurative lymph nodes. Caution must be used, however, because syphilis may present atypically or may occur concurrently with HSV and because the inci-

dence of chancroid in the U.S. has been increasing.

Rapid diagnosis of HSV infection may be made from scrapings of active lesions stained with Papanicolaou or Wright-Giemsa (Tzanck preparation). Enlarged cells, intranuclear inclusions and multinucleated giant cells are identified on positive slides. Direct staining methods have low sensitivities, detecting as few as 38 percent of culture-confirmed cases.⁶⁵

HSV is grown in tissue culture and the virus is detected by cytopathologic changes (giant cells, intranuclear inclusions), or immunologic staining techniques.⁵⁷ The sensitivity of culture is highest when the sampled lesion is in the early vesicular stage (sensitivity 94%) and lowest when samples are taken from crusted lesions (sensitivity 27%).⁵⁷

Treatment

Acyclovir is the treatment of choice for genital herpes virus infections. Primary infections are treated with 200 mg orally 5 times daily for 10 days. Treatment should be begun within the first few days of the primary attack and has been proven to decrease the duration of viral shedding and shorten healing time.⁶⁶ A course of acyclovir prescribed for the primary episode does not prevent recurrences.

Oral acyclovir is of less benefit in recurrent disease. Given within 48 hours of the onset of symptoms, the drug shortened healing time by only 1 day and had no significant effect on symptoms (given as 200 mg 5 times daily for 5 days). Topical acyclovir has no significant effect on either symptoms or time to healing of lesions in recurrent disease.^{67, 68}

In patients with frequent or unusually troublesome recurrences, oral acyclovir may be used as suppressive therapy.⁶⁸ Doses have varied from 200 mg 2-5 times daily. In a population having a natural recurrence rate of 4 to 12 episodes per year, long-term acyclovir therapy completely prevented recurrences in 65 to 85% of patients.⁶⁸ Once therapy is discontinued, the effect is reversed and the patients resume their natural course. Although presumed safe, studies have been performed only for a period of months: there is little data on drug toxicity in patients taking acyclovir for very prolonged periods of time. The drug has not been approved for use in pregnancy.

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Chancroid

Chancroid was first described in 1852 by Brassereau as a clinical entity distinct from the more familiar chancre produced by syphilis.⁶⁹ Although previously rare in the United States, the global incidence of chancroid now exceeds that of syphilis and the frequency of reported outbreaks in this country has increased since 1982.^{70, 71}

Schmid's review of chancroid outbreaks within the United States has revealed several demographic commonalities.⁷² The disease was more common among heterosexual Blacks and Hispanics with a markedly elevated male-female ratio (3:1 to 25:1). This ratio was highest in outbreaks involving prostitute patronage. Geographic clustering of outbreaks occurred in 1986 where New York, Texas, California, Florida and Georgia accounted for 98.4% (3,240 cases) of all reported cases. Over the past 5 years, only 2 outbreaks have been successfully contained and the organism eliminated. The apparent establishment of endemic chancroid infection combined with the mobile nature of North American society suggest that chancroid must be considered for inclusion in the differential diagnosis of ulcerative genital lesions.⁷¹

Chancroid is characterized by a painful "soft chancre," which possesses an irregular necrotic base often covered by yellowish exudate. Lesions occur most commonly on the coronal sulcus of the glans penis in men and as multiple lesions on the cervix and around the anus in women.⁷² One-third of the cases are associated with painful inguinal lymphadenopathy, which may suppurate and form sinus tracts.⁷³

Diagnosis

Hemophilus ducreyi, the etiologic agent, is a fastidious gram-negative coccobacillus that makes successful isolation and culture of the organism from inguinal buboes or ulcer bases a challenging exercise. Several selectively enriched solid media have been described that support the growth of *H. ducreyi* but the absence of an effective transport medium requires that cultures be plated immediately upon collection.^{74, 75} Due to the difficulty in obtaining a culture-proven diagnosis, epidemiologic studies as well as therapeutic decisions are frequently based upon clinically de-

fined cases. Criteria have included 1) painful genital ulcers, painful inguinal lymphadenopathy, 2) prompt subjective improvement following erythromycin that failed to respond to penicillin G benzathine or tetracycline, 3) negative dark-field microscopy and/or negative syphilis serology and 4) negative Tzanck smears or *Herpes simplex* cultures.⁷¹

Treatment

Fortunately, there are several therapeutic options available including erythromycin, ceftriaxone, trimethoprim-sulfamethoxazole and amoxicillin/clavulanic acid combinations. Erythromycin in a dose of 500 mg 4 times daily for 7 days has been effective, but gastrointestinal intolerance may limit patient compliance. Erythromycin-resistant strains from the Orient have been reported.⁷⁶ Ceftriaxone as a single 250 mg intramuscular dose has the advantage of enforced compliance as well as efficacy. Prior to initiating therapy with ceftriaxone, syphilis must be excluded as a concomitant infection as subsequent dark-field examinations may become negative while *Treponema pallidum* persists in other sites.⁷³

Trimethoprim/sulfamethoxazole in a dose of one double-strength tablet (160 mg/800 mg) twice daily for 7 days remains clinically effective in the United States although resistance has been documented in Thailand. Although experience with amoxicillin/clavulanic acid is limited, doses of 500 mg/125 mg given 3 times daily for 7 days has been effective.⁷⁷ Sexual contacts of cases should be contacted for examination and treatment. Disturbing reports from Africa that imply chancroid and other ulcerative diseases may contribute to the heterosexual spread of human immunodeficiency virus should further stimulate the medical community to remain alert for the occurrence of *Hemophilus ducreyi*.⁷⁸

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Complete references available upon request.

Our apologies to Dr. Robert Clark and Dr. Hala Shamsuddin whose article *Vancomycin: Specialized Niche for a Narrow-spectrum Antibiotic*, appeared in this column in June, 1988 and whose names were inadvertently omitted from the publication as co-authors. — J. E. Kasik, M.D.

Swimming Safety

SWIMMING AND WATER-RELATED recreation are popular activities in Iowa. Unfortunately, there are serious head and spinal injuries, drownings and diseases associated with swimming. Preventing accidents requires a concerted effort by state and community leaders and professional organizations to provide public education programs to reduce injuries.

Incidence in Iowa/U.S.

Currently, the Iowa Department of Public Health (IDPH) is investigating swimming related deaths during the first part of the 1988 summer swimming season in Iowa. The department has compiled a list of serious injuries and drownings from Iowa swimming pools, slides, spas and beaches from previous seasons.

The National Safety Council, the U.S. Centers for Disease Control and the U.S. Consumer Product Safety's data show: 1) drowning is the third leading cause of accidental death for children under 5; 2) over 8,000 persons drown annually; and 3) an estimated 65,000 serious water-related accidents occur in the U.S. every year. Serious injuries, near drownings, electrocutions and chemical spills are largely unreported to a control agency.

Injury Case Reviews

A review of case injuries following serious swimming accidents shows:

- The most common severe injuries are fractures of the spine or head as a result of striking the bottom of a swimming pool/beach or striking a submerged object. Many of these injuries result in complete quadriplegia.

- Proper rescue procedures are employed in only a small percentage of cases. Some peo-

ple suffering spinal injuries may have incurred further loss of neurological function through mishandling at the accident scene. Working knowledge of basic emergency care is critical for all who participate in water recreation.

- Most victims of spinal/head injury accidents displayed poor judgment by diving into shallow water. Low water levels found in Iowa beaches and lakes (because of current drought) increases the "unawareness factor" which can lead to increased incidences.

- A typical drowning victim is a child 2 years old. The parent or supervisor is busy and allows supervision to lapse, unaware the child is near the backyard pool. The child falls in, can't swim and drowns with no sounds or signs of struggle. Parents and supervisors never perceive how quickly drowning takes place.

Condition of Iowa Pools

Iowa's public swimming pools/beaches — municipal, hotel, motel, apartments and backyard pools — often do not meet basic standards for safety. Based upon spot inspections, major areas where simple precautions would eliminate significant risks are:

- Supervision. There are insufficient numbers of properly trained and certified lifeguards. Pool regulations are often unenforced.

- Design and construction. Many pools do not have sufficient water depth for diving.

- Water quality control. Many public pools, particularly hotel/motel and apartment pools, do not have the necessary filter and chemical equipment or trained operators to provide clear and clean water.

- Communication. All public facilities need to develop awareness and information programs. State and local officials need to promote and develop these educational programs.

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- The public, including private pool owners, need to identify water safety hazards and to prevent accidents.

Legislation Needed

A statewide program to provide routine inspection, training, and public education on pool safety does not exist. Iowa is the only state which has no swimming pool safety laws.

During the 1987-88 session, proposed swimming pool legislation was seriously considered. Although the proposal did not pass, many individuals and organizations supported the bill. The legislation will be resubmitted during the 1989 legislative session. The legislation proposed would do the following:

- Establish minimum design and operational standards.
- Assure routine inspection of all public pools by qualified inspectors (coordinated between state and local inspectors).

- Develop operator training and lifeguard certification.

- Provide design approval of new installations.

- Promote public education for both private and public pool owners.

What Can Physicians and the Medical Community do to Help?

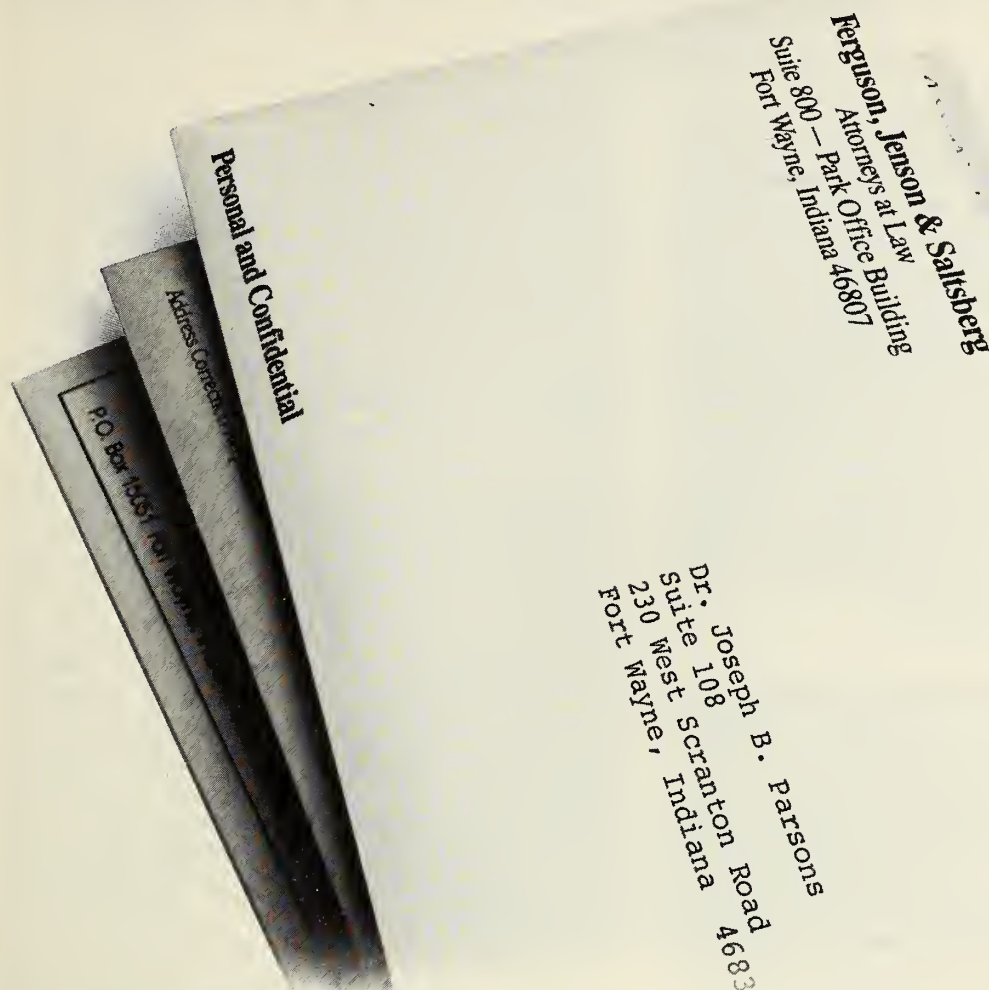
Medical professionals are in a key position to influence parents and promote safety suggestions:

- Be aware of water recreation risks and inform parents of the cause of severe swimming accidents; know what simple precautions can significantly reduce risks.
- Report serious accidents and disease to the state or local health departments.
- Support efforts to pass swimming pool safety legislation.

July 1988 Morbidity Report

Disease	July 1988 Total	1988 to Date	1987 to Date	Most July Cases Reported From These Counties	Disease	July 1988 Total	1988 to Date	1987 to Date	Most July Cases Reported From These Counties
AIDS	7	26	26	NA	Legionellosis	2	13	6	Dickinson, Johnson
Amebiasis	4	11	18	Black Hawk, Bremer, Polk, Scott	Malaria	0	1	3	
Brucellosis	0	1	3		Meningitis				
Chickenpox	13	6419	7570	Scattered	aseptic	1	19	23	Scott
Campylobacter	68	250	204	Scattered	bacterial	6	71	57	Scattered
Cytomegalovirus	0	4	13		meningococcal	0	0	3	
Eatons Agent Infection	0	21	39		Mumps	1	33	371	Clinton
Encephalitis, viral	0	8	3		Pertussis	5	20	15	Appanoose, Johnson, Polk, Wapello, Woodbury
Erythema Infectiosum	0	107	880		Rabies in animals	17	104	175	Scattered
Gastroenteritis (GIV)	100	13827	10792	Scattered	Reye Syndrome	0	0	0	
Giardiasis	38	183	163	Scattered	Rheumatic Fever	0	0	2	
Hepatitis, A	2	34	78	Allamakee, Black Hawk	Rubella				
Hepatitis, B	11	58	82	Scattered	(German measles)	0	0	1	
Hepatitis, Non A-B	1	11	19	Polk	Measles	0	0	0	
Hepatitis type unspecified	0	2	5		Salmonellosis	62	117	85	Scattered
Herpes Simplex	63	593	705	Scattered	Shigellosis	15	139	21	Scattered
Herpes Zoster	0	0	2		Toxic Shock Syndrome	0	0	4	
Histoplasmosis	4	12	9	Davis, Franklin, Linn, Polk	Tuberculosis				
Infectious mononucleosis	1	94	130	Polk	total ill	8	26	26	Scattered
Influenza, lab confirmed	0	110	67		bact. pos.	8	22	26	Scattered
Influenza-like illness (URI)	151	25581	24685	Scattered	Typhoid Fever	0	0	0	
					Venereal diseases				
					Gonorrhea	194	1210	1766	Scattered
					Chlamydia	345	2491	2058	Scattered
					Syphilis	3	15	12	Polk
					Other Non-Reportable Diseases: Lyme Disease — 1, Linn; Q Fever — 1, Marion; Yersinia — 1, Allamakee; 1, Bremer; 1, Linn.				

Crisis in black and white.



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Medical News/Products and Programs

A MAGICAL JOURNEY TO ANATOMY-LAND — The Anatomical Chart Company announces the publication of the 1988-89 edition of "The Anatomical Products Catalog." Imagine . . . the world's largest collection of innovative and educational products on health, human anatomy and science related topics — over 5,000 products in all! The 240 page catalog divides the merchandise into 4 categories: charts and posters, models and training aids, books and publications and the Anatomical General Store. For more information and a copy of this spectacular catalog send \$3.00 (\$5.00 refundable with a \$30.00 mail-in order) to: The Anatomical Chart Company, 7124 North Clark Street, Chicago, Illinois 60626.

NEW INTRACELLULAR CA⁺⁺ SYSTEM — *The new Nikon Intracellular CA⁺⁺ System is now available, offering highly accurate intracellular free CA⁺⁺ measurement with extremely reliable, easy-to-use hardware and software. The basic system consists of a high U.V. transmission Diaphot with epifluorescence illuminator, 2 Nikon P1 Photometers, a dual Photometer attachment and the intracellular CA⁺⁺ software package. The Intracellular CA⁺⁺ system is adaptable to any Nikon Diaphot currently in use. Major applications of the system are measurement of intracellular calcium concentration w/Indo-1, recently shown to be effective in the study of the nature of cell division, tumor development, nerve impulse transmission and muscle contraction. For more information on the Nikon Intracellular Calcium System, write or call Nikon Inc., Instrument Group, Biomedical Department, 623 Stewart Avenue, Garden City, New York 11530, 516/222-0200.*

RAPID DETECTION OF GROUP B STREPTOCOCCUS ANTIGEN — Bactigen® Group B Streptococcus-CS is a latex agglutination test from Wampole Laboratories for the detection of Group B Streptococcus antigen from cervical or vaginal swab samples obtained from pre-term or intrapartum patients. Bactigen® Group B Streptococcus-CS will identify those patients

with significant colonization whose infants are therefore at risk of developing Group B Streptococcus related morbidity. Further information can be obtained from Wampole Laboratories, Division of Carter-Wallace, Inc., Cranbury, New Jersey 08512, 609/655-6000.

MONO-LATEX® PRODUCT IMPROVEMENTS — *Wampole Laboratories MONO-LATEX®, the unique one step, 2 minute latex agglutination slide test for detecting infectious mononucleosis antibodies is now available with Room Temperature Storage (up to 25 C). Product dating has also been extended up to 18 months from date of manufacture. MONO-LATEX® is also now available in a 1,000 test kit, in addition to the 20 and 50 test kit sizes. The 1,000 test kit, designed for large volume users, minimizes lot to lot quality control, the need for frequent purchases and the storage space required. MONO-LATEX® is available from all major laboratory suppliers. Further information is available from Greg Winther, Product Manager, Wampole Laboratories, Division of Carter-Wallace, Inc., Cranbury, New Jersey 08512, 609/655-6000.*

NEW CMV ANTIBODY TEST — The Virogen® CMV Antibody Test is a latex agglutination slide test for the qualitative and quantitative detection of cytomegalovirus (CMV) antibodies in serum or plasma. This new test provides 10-minute results without the complexity of enzyme or fluorescence immunoassays. To perform the test, add latex to the sample, mix, then rotate the slide for 10 minutes and observe for agglutination. This simplicity is complemented by the convenience of color-coded reagent dropper vials, disposable care slides, a workstation module and optional sample pipets to safely streamline testing and economize on supplies. For further information contact Nicholas J. Martin, Product Manager, Wampole Laboratories, Division of Carter-Wallace, Inc., P.O. Box 1001, Cranbury, New Jersey 08512-0181, 609/655-6000.

COMPUTER-AIDED SPIROMETER SPEEDS AND SIMPLIFIES LUNG DISEASE DETECTION — Spiroscan 2000, from Brentwood Instruments, Inc., 3425 Lomita Boulevard, Torrance, California 90505, 1/800-624-8950, represents the latest technology in speeding and simplifying pulmonary function testing in physicians' offices. At the touch of a single button, all measurements and calculations are automatically displayed, within seconds, by this computerized spirometer. A suggested interpretation is also provided for the physician's review and diagnosis. If desired, both pre and post bronchodilator tests, as well as percentage of change, are also printed. Brentwood's Spiroscan 2000 has an easily removable, complete air passage. A simple twist and the total flow device can be completely autoclaved or chemically sterilized to assure against cross contamination between patients.

TRANSPARENT FILM DRESSINGS — Wounds treated with Johnson & Johnson BIOCLUSIVE® Transparent Film Dressings, a thin polyurethane film coated with hypoallergenic adhesive, show less scarring than those dressed with conventional dry gauze and antibiotic ointment, according to a study published in the June edition of *Archives of Dermatology*. BIOCLUSIVE® dressings are widely used therapeutic products for the management of IV sites, chronic wounds (ulcers), burns, skin-graft donor sites and light to non-draining surgical incisions and wounds. The dressings come in a variety of convenient sizes, including: 1½ in. x 1½ in., 2 in. x 3 in., 4 in. x 5 in., 5 in. x 7 in., 4 in. x 10 in. and 8 in. x 10 in. A patented 3-tabbed system allows for quick and aseptic delivery of the dressing.

PIONEERS OF SURGERY — NOVA, public television's award-winning science documentary series, explores the rise of modern surgery in a special 4-part series called *Pioneers of Surgery*. Airing Tuesday, September 6 at 8 p.m. on PBS (check local listings), "The Brutal Craft," the series premiere, deals with those early days of surgery and the gradual development first of anesthesia, then antiseptics and later blood transfusions.

On Thursday, September 13, "Into the Heart" will recount the daring attempts to operate on the heart.

Perhaps the most remarkable of all surgical procedures — the replacement of a diseased organ with one transplanted from another human — is the subject of the third NOVA program, "New Organs of Old," airing Tuesday, September 20.

The final program in the series, "Beyond the Knife," airs Tuesday, September 27 and looks at some of the excesses of surgery.

U.S. F.D.A. APPROVES PACEMAKER — Cook Pacemaker Corporation, Leechburg, Pennsylvania, has won approval from the U.S. Food and Drug Administration (FDA) to market the company's revolutionary KELVIN® 500 pacemaker. The software-based KELVIN® 500 device is the first temperature-activated, rate-modulated cardiac pacemaker designed to mimic normal heart rhythm by sensing specific needs for cardiac output — and responding appropriately. It is a small, sophisticated, multiprogrammable SSI unit suitable for a conventional VVI, single-lead surgical procedure. The KELVIN® 500 pacemaker is designed to rapidly respond to right ventricular blood temperature changes resulting from rest, activity, exercise or stress.

Health in Child Care Project

The Iowa Medical Society Board of Trustees is endorsing a new project titled "Keeping Kids Healthy and Parents At Work." The project was developed by the Iowa State University Extension and other organizations and agencies concerned with health in child care.

The project is designed to provide accurate information about disease transmission, sick-child care, preventive health practices and safety in child care settings.

Health professionals, child care providers, parents and employers from 14 counties in central Iowa will be chosen to form county teams. Using a grassroots approach, the teams will relay the information to other county residents.

Susan Aronson, M.D., a clinical professor of pediatrics at Hahnemann University in Pennsylvania and nationally recognized authority on health practices in child care settings, will be the keynote speaker at a training conference in October. Dr. Aronson's keynote address and a panel discussion will be transmitted by satellite to sites across Iowa on October 1.

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About Iowa Physicians

Dr. Ronda Dennis-Smithart, Ottumwa, has been appointed to the Clinical Associate Faculty of the University of Iowa, Department of Pediatrics. Dr. Dennis-Smithart also is a new fellow in the American Academy of Pediatrics and will continue to practice in Ottumwa with **Dr. Debra K. Miller** at Pediatric Associates. **Dr. Stephen Sparks**, Keosauqua, has moved his private family practice to Bloomfield. Dr. Sparks had practiced in Keosauqua for 5 years. **Dr. Mel Wallinga** has begun medical practice in Orange City. Dr. Wallinga received the M.D. degree from the U. of I. College of Medicine. He served his residency at Yakima Valley Family Medicine, Yakima, Washington and maintained a family practice in Yakima for 6 years.

Dr. Claire Lindholm was honored on his retirement at a July 4 parade in Armstrong. Dr. Lindholm received the M.D. degree from the U. of I. College of Medicine. He retired from his Armstrong practice after 35 years and 2500 babies, about 300 of whom joined in the parade march. **Dr. Herman Hein**, head of the Statewide Perinatal Care Program and a U. of I. pediatrician, was among 51 unsung heroes honored in the July 4 issue of *Newsweek*. One person from every state was chosen for overcoming personal adversity or engaging in activities that have improved their communities or benefited others. Dr. Hein has been cited for setting up the perinatal program at Uni-

(Please turn to page 442)



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versity Hospitals in 1973, saving the lives of about 400 newborns per year. **Dr. Greg B. Polzin** has joined **Dr. William J. Burke** and **Dr. Grant L. Paulsen** at Gynecology and Obstetrics, M.D.'s, P.C., Des Moines. **Dr. Paul B. Voleker** has joined **Drs. John F. Murphy** and **Stephen M. Sundberg** at Boone Medical Specialties. Dr. Volker received the M.D. degree from the U. of I. College of Medicine and completed a residency in family practice at Waukesha Memorial Hospital Medical College of Wisconsin in Waukesha, Wisconsin. He has replaced **Dr. Robert A. Manderscheid**, who has retired after 36 years of practice in Boone. Dr. Manderscheid received the M.D. degree from the U. of I. College of Medicine.

Dr. John A. Broman has retired after nearly 40 years of medical service to the Maquoketa area. Dr. Broman received the M.D. degree at Hahnemann Medical College of Philadelphia in Philadelphia, Pennsylvania. **Dr. Louis R. Greco** has joined **Drs. Wayne Rouse, John Anderson, Frank Downs** and **James Hardinger** at the McFarland Clinic in Boone. Dr. Greco has been in surgical practice in Boone since 1955. **Dr. Guy McCaw** has begun family practice in Grinnell, sharing facilities with **Dr. H. R. Light**. Dr. McCaw received the M.D. degree at the U. of I. College of Medicine and completed his residency through the Cedar Rapids Family Practice Program. **Dr. Jon Fagre** has joined the medical staff at Greater Community Hospital in Creston. Dr. Fagre had practiced in Denver, Ames and Waterloo prior to locating in Creston. **Dr. David G. Stilley** has joined the staff at Iowa Methodist Medical Center, Des Moines, as an emergency room physician. He previously practiced with Nishna Valley Family Physicians, P.C., Harlan, for 5 years. **Dr. James R. Laferriere** has joined **Drs. Wilmer G. Garrett, John C. Justin** and **Adel F. Markar** at the pediatric and Adolescent Clinic in Mason City. Dr. Laferriere previously practiced in Fort Dodge. **Dr. Thaddeus T. Bozek**, Iowa City, has retired after 39 years of private practice in West Branch. Dr. Bozek received the M.D. degree at Creighton University School of Medicine, Omaha, Nebraska. **Dr. Elizabeth Loeb** and **Dr. Tom Novak** have taken over Dr. Bozek's medical practice in West Branch. **Dr. Terry Cochran** has joined **Drs. Gene Egli** and **Donal Hill** at the Medical Arts Clinic, Fairfield. Dr. Cochran re-

ceived the M.D. degree from the U. of I. College of Medicine and completed his residency in family practice in Davenport. **Dr. Francois M. Abboud**, Iowa City, was elected to the 36-member national board of directors of the American Heart Association at its annual meeting in St. Louis, Missouri. **Dr. Thomas E. Smith, Jr.**, Ames, has been named a fellow of the American Academy of Facial Plastic and Reconstructive Surgery. **Dr. Michael Kafka**, pathologist at St. Luke's Regional Medical Center in Sioux City, has had an article published in *Archives of Pathology and Laboratory Testing*, a publication of the AMA. Dr. Kafka presented his paper entitled "Internal Quality Control, Proficiency Testing and Clinical Reliance of Lab Tests" at a national conference last year.

Deaths

Dr. Howard H. Hildebrand, 70, Ames, died June 13 at Mary Greeley Medical Center in Ames. Dr. Hildebrand received the M.D. degree at the University of Nebraska College of Medicine, Omaha, Nebraska and served his pediatric residency at Buffalo Children's Hospital, Buffalo, New York. He joined the McFarland Clinic in Ames and retired in 1984. He was a member of the Iowa Pediatric Society and the Iowa Chapter of American Academy of Pediatrics.

Dr. Homer E. Wichern, 68, Des Moines, died June 25 at Iowa Methodist Medical Center. Dr. Wichern was a general surgeon in Des Moines until his retirement in 1985. He served for 15 years on the board of directors of Iowa Methodist Medical Center where he was a former president of the medical staff.

Dr. J. J. Buchanan, 82, longtime Milford physician, died June 28 at the Milford Nursing Home. Dr. Buchanan received the M.D. degree at Indiana University School of Medicine, Indianapolis, Indiana and completed a residency in Lacrosse, Wisconsin. He retired in 1984 and was honored by the Milford community for 50 years of medical service to the area.

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Powerful Message for Teens

GARY, AN IOWA TEENAGER with an athletic scholarship and a promising future, took his young life in his hands one night and irreversibly altered it. He got drunk and stoned and crashed his car going 80 miles per hour. Though he survived the accident, Gary is now mentally and physically handicapped.

Gary sums up his feeling about what happened with these poignant words . . . "Since my accident, I'm known as being partially retarded; but, drinking and throwing my life away the way I did, I think I was retarded back then. I still can't believe what I did to myself."

This young man is one of several teenagers interviewed in a new videotape produced by the Iowa Medical Society which is available to schools across Iowa. The tape's message is crystal clear: If you drink and do drugs, you're liable to get hurt.

Tragically, Gary is only one of thousands of young people who suffer alcohol or drug related traumatic injuries every year in the United States. In a time when morbidity and mortality rates among youth have shown an alarming upward trend, alcohol and drug-related accidents have become the number one killer of teenagers.

The new IMS videotape contains factual information about teenage substance abuse and traumatic injury. However, the focus of the presentation is the testimony of kids who put themselves in harm's way through alcohol or drug abuse.

The tape was very well-received at the IMS Annual Meeting last April, with many physicians requesting copies to use for local presentations on the problem of teenage substance abuse. Recently, the tape was shown to a substance abuse education consultant with the Iowa Department of Education, who also reacted very favorably.

As a result, plans are now being implemented to distribute copies of the tape in school districts across Iowa. The goal is for every 8th-12th grader in Iowa to eventually see the tape. A study outline has been developed for teachers to use in conjunction with the videotape.

Earlier this month, a press conference regarding the new video presentation was held at Society headquarters. Media representatives viewed the tape, background information was provided on its development and efforts of the IMS and the Department of Education to distribute the tape were outlined. Copies of the tape have been delivered to each of 15 area education agencies across Iowa and additional tapes have been retained at Society headquarters for loan to physicians.

The tape has a very powerful message for Iowa's youth, and physicians and others involved in its creation are hopeful the message gets across. In the tape, a woman whose 21-year-old son died of a drug overdose said she constantly asks herself the question "What could I have done?" Through efforts such as this one by the IMS, maybe that question will be answered.

September 1988

Iowa Medicine

Daniel M. Youngblade, M.D.

President's Privilege



Protecting Quality Care

WHY AN ISSUE ON QUALITY CARE? We all know what quality care is — or do we? Is it the ability to evaluate a patient, identify risk factors, make an accurate and timely diagnosis, stage the disease and plan treatment, all in a compassionate manner? Or, is poor quality care related to lack of knowledge or departure from acceptable practice standards?

Physicians are being asked to improve quality of care. We are asking others not to undermine quality of care by shortening hospital stays or failing to provide adequate funds; but, when asked to define quality care we find it difficult to produce a good definition or a means of measurement. Third party payors and the public need methods to measure quality, but the medical profession can't meet that need.

Philip Lee, M.D., director of the Institute of Health Policy Studies, states that the medical profession faces a profound challenge. "Will the profession continue as an autonomous profession — able to set its own standards and regulate its own members — or will it be treated as hundreds of other occupations subject to increasing external control and the ethics of the marketplace?"

Public perception of physicians, government cost-saving measures, incentives to provide less care, courts, legislatures, employees, insurers and society's changing values all directly affect physicians. Likewise, factors in medicine — increasing physician

numbers, increasing numbers of female physicians, rapid advances in science, technology and instrumentation and the continued rise in health care costs — all impose unprecedented changes for the future.

We as a profession have not dealt with the cost issue. Commercial health care, investor owned hospitals, the business of medicine and failure to protect society from incompetent, negligent and unscrupulous physicians all relate to public perception of quality care.

We must find ways to assess quality care in order to deal with those who do not measure up to standards. I urge you to become involved. Read the August, 1988 grey sheet listing house and senate files relating to quality care published by the IMS. Be aware of HCFA guidelines, including severity level ratings for quality review in Survey 88 — THE REVIEWER, published by the IFMC.

Don't be complacent. Become conversant and educated about local, state and federally mandated regulations as they relate to quality care. We must be able to respond intelligently if we are to protect quality medical care for our patients.

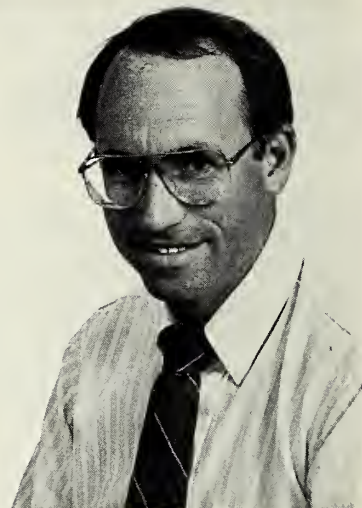
A handwritten signature in cursive script that reads "Daniel M. Youngblade M.D.".

Daniel M. Youngblade, M.D.
President

Quality of Care: Four Perspectives

Editor's Note: For this month's special feature, IOWA MEDICINE invited 4 guest authors to discuss their perceptions of quality health care. All 4 are highly qualified to speak to this issue from a unique perspective. John Dixon, M.D. is a family practitioner from Clinton who serves as secretary for the Iowa Foundation for Medical Care (Iowa's PRO) and as a member of the IFMC's Quality Methods Committee. Bruce Trimble, M.D. is an internist in Mason City and chairman of the IMS Board of Trustees. Merle Wilson is associate area vice president, Area VI, for the American Association of Retired Persons. Jay Storey is vice president of personnel at the Maytag Company in Newton.

John
Dixon, M.D.



A Peer Review Approach to Quality of Care

HIGH-QUALITY IS THE BUZZWORD for 1988. Automobiles operate with high-quality precision, color televisions display high-quality resolution and hospitals provide high-quality care.

Despite advertising gimmicks, informed consumers know "high-quality" is a relative term. Before buying a product such as an automobile, an informed consumer compares costs and test-drives different models.

Health care is not a tangible item to be "test-driven" or sampled, yet consumers need assurance that they are receiving the best, most efficient health care possible. Who could provide this assurance better than physicians? Consequently, in 1983 Congress created state peer review organizations, or PROs. Directed by practicing physicians, PROs provide the expertise needed to evaluate medical care.

Traditionally, the PRO program has focused on performance and outcome to evaluate patient care. If surgery and post-operative care is provided according to professionally recognized standards, the provider is said to practice good medicine. However, studies such as small area analysis have uncovered marked regional variations in practice patterns. Could one method prove more effective and efficient than another?

Slowly, PRO review is evolving to consider performance, outcome and appropriateness of treatment. As suggested by Paul Ellwood, M.D. of InterStudy in a recent Shattuck lecture to the Massachusetts Medical Society, we should evaluate health care not on quality alone, but on the quality of living afforded by that care. Consider the following situation:

A 76-year-old male presents to the emergency department with symptoms indicating an MI. After

performing a brief work-up, the attending physician orders a cardiac catheterization. The catheterization reveals multiple occlusions. On the basis of the catheterization report, the attending physician and consulting cardiologist perform bypass surgery. The surgery is successful and the patient has a smooth recovery.

From all appearances, this case was well-handled — the surgery well-executed and post-operative care well-supervised. By performance and outcome standards, the patient received "high-quality" medical care.

However, was bypass surgery the most appropriate choice? Might angioplasty have alleviated the blockage?

This question could only be answered by a cardiologist familiar with the circumstances, but it is a question PROs are beginning to consider. Studies by PROs and other organizations have identified regional differ-

ences in treatment modalities for similar cases, but no one has yet identified why these differences occur.

Angioplasty can be performed on an outpatient basis and requires fewer resources and medical personnel than coronary bypass. More importantly, it is less traumatic for the patient. The "bottom line" in this case might be higher quality of life.

As evidenced by recent expansions in the PRO program, the federal government understands the importance of maintaining physician control of medical review. However, the government is encouraging PROs to operate as well-informed consumers and to consider "quality of life." In the end, the balance of efficiency with performance and outcome will undoubtedly deliver the best care possible. — *John Dixon, M.D.*

Measuring Quality: A Physician's Perspective

THERE IS NO SIMPLE DEFINITION of "quality health care," although most of us have an intuitive concept. In today's climate, cost effectiveness must be part of any definition.

The process of quality assessment generally has 3 aspects: *structure* refers to such things as the credentials of staff physicians and committees devoted to quality assurance; *process* is evaluation of the actual delivery of care; and *outcome measures*, which may seem self-defining but really require severity adjustment for interpretation. (Some patients do less well and require more expensive care simply because they are more severely ill.)

Recent interest in better and more public quality measurement has several origins. Development of specific, but sometimes more hazardous and expensive, interventions has led to demands for assurance of appropriate and high quality performance. Purchasers, frustrated by rising health care costs, want better measures of outcome and efficiency. Computer technology allows the processing of large amounts of data. Finally, both purchasers and large providers (hospitals, large clinics, HMOs) feel an increasing need for systematic quality assurance programs in the face of cost-cutting efforts.

R. Bruce
Trimble, M.D.



Organized medicine has been active in recent discussions on quality assessment and assurance. The AMA in 1986 suggested 8 elements which, together with outcome, characterize quality care. Briefly, quality care should 1) produce optimal improvement, 2) emphasize health promotion and disease prevention, 3) be provided in a timely manner, 4) seek to achieve the patient's informed cooperation and anticipation, 5) be

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proficient and based on accepted scientific principles, 6) be provided with sensitivity and concern for patient welfare, 7) make efficient use of technology, and 8) be sufficiently documented to allow continuity of care and peer evaluation.

The AMA's Health Policy Agenda of the American People in 1987 recommended "accountability through quality assurance mechanisms should be part of every system of health care delivery," and should involve "... consumer participation where appropriate."

Recently, the AMA established an Office of Quality Assurance. The IMS has formed a Subcommittee on Medical Care Assessment. JCAHO has increased emphasis on the structure and process aspects of quality assurance in its accreditation requirements and is working on a pilot project of "clinical indicators" for concurrent assessment of hospital care.

Physicians have always been proud of the care they provide. Much of the history of organized medicine is a chronicle of successful efforts to improve the quality of health care. It is easy to be irritated at steadily expanding assessment efforts, especially when these are imposed from outside the profession.

However, it is a fact that quality assurance is now beyond the sole jurisdiction of

the medical community. HCFA has for several years emphasized quality assessment in its review activities, has for the past 2 years published hospital-specific mortality data and has begun to study methods for evaluating individual physician performance.

In Iowa, the Health Data Commission is working on final regulations for collecting standardized severity and outcome data from hospitals of 100 beds or more. The IMS and the IHA testified in opposition to these regulations as the systems to be mandated are very expensive and the data to be generated have not been shown to be useful for the purpose of public accountability. The IMS does favor continued study in this area.

From conversations with businessmen, consumer representatives and policy-makers, I am convinced these groups want physicians to take a lead in strengthening quality assessment and assurance methods and explaining the resultant data to increasingly sophisticated purchasers and policymakers. If we do not do this well, we risk allowing standards of care to be defined by less knowledgeable groups who may, in some cases, be more interested in cost containment than quality care.

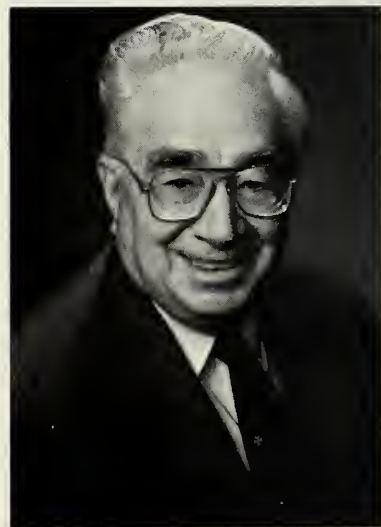
This leadership role is not new; defining and maintaining quality have always been physician roles. Only the techniques and circumstances change. — R. Bruce Trimble, M.D.

A Consumer's Perspective

RISING HEALTH CARE COSTS continue to focus public attention on health care reform. It is likely this will continue well beyond the year 2000. In our effort to achieve a more efficient, well balanced system, we must not lose access to quality medical care across the entire continuum of service needs. It is important we better understand what quality medical care is so the provider/patient relationship is maintained. We must evaluate the widely available payment schemes in terms of quality care received.

Consumers faced with a tightening of health care resources and consequent cut-backs in care are questioning, and rightly so,

Merle
Wilson



just what they are buying for their health care dollars. The answer to this question may be found by considering such strategies as:

- Development and implementation of a quality assessment and assurance system that identifies problems.
- Implementation of appropriate corrective actions.
- Monitoring the effectiveness of the actions taken and collecting data that can be used by researchers to evaluate the "product" being delivered by the system.
- These strategies should generate quality of care information to the provider and to the consumer alike.

While we suggest such activities would be helpful in evaluating quality of care, such a system does not yet exist in its entirety. Pieces of it are in place and we must continue to move toward its full realization.

Measuring Medical Quality — A Business Perspective

THE REAL PROBLEM is how to cope with runaway medical care costs. Measuring quality has become a necessary byproduct of this effort.

In 1981, Governor Ray established the Governor's Commission on Health Care to study skyrocketing costs. This commission assembled those involved in purchasing, financing and delivery of medical services to analyze what could be done. It was painfully evident there were few price/value judgments being made by the consumer, which is what normally controls the amount and price of services purchased in our free enterprise system.

This was true because so many employers (including our government as an employer and welfare provider) insulated employees from the impact of medical costs through first-dollar and almost full-pay medical plans. This coupled with the practice of reimbursing providers on a cost-plus or UCR fee basis puts incentives in place for runaway medical costs.

While AARP acknowledges and supports the effort to contain health cost inflation, health delivery decisions should come primarily from a commitment to quality assurance and not merely to cost containment. The Association has long held the view that shorter hospital stays do not necessarily imply inappropriate care. By the same token, high quality care is not necessarily the most expensive care.

Strategies must improve health outcomes while respecting the physician-patient bonds. This relationship in itself enhances the healing process. In recent years these physician-patient bonds have been under severe stress and have eroded in some cases. Our interests lie in an efficient, cost effective health care system; while at the same time maintaining a humane, caring, trusting, mutual respect between provider and patient that is so critical to the patients' recovery from illness. — *Merle Wilson.*

Jay
Storey



The incentives for providers, consumers and payers were:

- Hospitals made the most money when they kept beds full and provided as many services as possible to get the cost-plus or billed charges.
- Medical professionals made money

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seeing as many patients and providing as many services as possible.

- The patient, who did not pay the bill, demanded the most extensive services.
- The third-party payer made more money by paying more claims.

The obvious result was runaway costs, and the obvious solution was:

- Change the incentives so cost-effective providers were rewarded and non-cost-effective providers were forced to change or be driven out of business OR

- Governmentally regulate the cost and amount of services.

A government-controlled medical delivery system is a scary proposal for many of us and it is not surprising Iowans chose the first solution.

Iowans started changing incentives so that purchasers would reward cost-effective medical providers. Thousands of medical plans were changed from first-dollar, full-coverage plans to comprehensive plans with front-end deductibles paid by the patient. The idea is when patients share the cost they seek out cost-effective providers.

At the same time, "preferred provider groups" were encouraged to compete for large blocks of patients from companies and government agencies. All this happened along with creation of the Health Data Commission, which attempts to provide the public with data on cost-effective medical providers.

Not surprisingly, when price competition starts to take place, all sectors become worried that price competition will affect quality. That's why it's so important to have some type of measure that assures us quality health care need not suffer from good, cost-

effective management.

There appears to be much evidence that quality of medical results is not directly related to cost. There are low-cost providers and high-cost providers who appear to achieve similar outcomes.

However, it does appear neither consumers nor providers will be satisfied with the move to lower cost medical providers until there is a way to demonstrate low cost is not being achieved at the expense of quality medical treatment. One problem is we do not have time to wait for development of better techniques to measure outcomes.

From 1981 through 1986, it looked as though there was some impact in slowing down cost increases in medical services (even though few were buying based on price). In 1987 and 1988, medical costs appear to have soared again at an even greater rate than in the late 1970s and early 1980s.

If we do not prove that normal market forces will control medical costs, the second alternative of government controlling and allocating medical prices and services will be put into effect by those who believe in government regulations.

Many emotions are generated by such questions as: Should we or can we measure medical quality or outcomes? What is quality? Which measure is best? Shouldn't we wait for a better system? This debate has stalled our efforts to control runaway medical costs. While we argue and fuss about this, Rome is burning. One day we will wake up with a full-fledged nationally controlled medical delivery system. Let's pick a measurement system and get on track again. — *Jay Storey*.

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THE PROUTY COMPANY

The HMO Contract and Quality of Care

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The authors discuss several HMO and PPO contract provisions which are potential pitfalls for physicians.

THE HEALTH CARE INSURANCE industry's subscription to "managed health care" has radically altered the physician's role in the health care delivery system. Many patient management decisions once made by the treating physician are now made by the third-party payor. Physicians must practice medicine within guidelines and mandates established by the insurance company through its contracts. Compliance may be compelled through economic sanctions. The potential for conflict of interest is evident. Liability for patient care under these arrangements is poorly defined. To avoid ethical and legal pitfalls, it is imperative physicians thoroughly review and understand

contracts they enter into with insurance companies.

The proliferation of HMO's and PPO's and other health insurance organizations and the threat posed by cost containment to physician professionalism were anticipated years ago by the Iowa Medical Society when it established its Committee on Alternate Delivery Systems. The Committee has closely monitored recent developments in managed health care. This article discusses several HMO and PPO contract provisions that have invoked concern. The discussion is presented in the form of questions to 3 attorneys who expressed a willingness to review current legal literature.

Question: Is the physician at risk signing contracts that require prior authorization before hospitalization or some forms of therapy can be instituted?

Response: Authorization requirements and utilization regulations are at the heart of problems with these contracts. These are the provisions which are intended to contain costs:

The Physician agrees that all non-emergency hospital admission of participants must be authorized in advance by the Health Insurance Organization. The Health Insurance Organization shall establish an appropriate length of stay necessary to treat the condition(s) for which the participant is hospitalized. The initial length of stay assigned the plan will comply with length of stay criteria and Quality Assurance Standards adopted by the Utilization Review Committee.

The primary difficulty stemming from these requirements and regulations is the potential for inconsistency with the accepted standard of care and incompatibility with good medical practice. It is essential to re-

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member that retrospective reimbursement programs led to development of a lavish standard of care. Despite the fact reimbursement schemes have changed, the standard of care does not necessarily reflect this change. A patient who does not recover may have a colorable claim against the physician because that physician failed to order exhaustive testing or prescribe state of the art treatment.

A recent case, *Wickline v. State*, 228, Cal. Rptr. 661 (1986), dramatized the difficulties physicians face due to the conflict between adequate care and cost containment. In *Wickline*, a patient brought an action against Medi-Cal, California's medical assistance program. The patient had been hospitalized for arteriosclerosis and circulatory complications in her right leg. Her treating physician felt she should remain in the hospital for continued treatment and monitoring. Consultants who reviewed the case on behalf of Medi-Cal determined she should be discharged. Soon after the patient left the hospital, she experienced problems arising from a blood clot in her leg. Subsequently, she underwent amputation of her right leg.

In the lawsuit, the patient alleged that the amputation was the result of premature discharge from the hospital. She did not name the treating physician as a defendant. The jury returned a \$500,000 verdict against Medi-Cal. The verdict was reversed on appeal. In its ruling, the California Court of Appeals stated:

Third party payors of health care services can be held legally accountable when medically inappropriate decisions result from defects in the design or implementation of cost containment mechanisms as, for example, when appeals made on a patient's behalf for medical or hospital care are arbitrarily ignored or unreasonably disregarded or overridden. However, the physician who complies without protest with the limitations imposed by a third party payor, when his medical judgment dictates otherwise, cannot avoid his ultimate responsibility for the patient's care. He cannot point to the health care payor as the liability scapegoat when the consequences of his own determinative medical decisions go sour.

Id. at 670-71. In other words, the pressures and constraints of prospective evaluation of medical care will not be taken into account when assessing liability. The treating physician has ultimate responsibility for the care of the patient. Moreover, physicians should be aware that if they sign away their

right to practice the accepted standard of care, it is possible they may be without professional liability insurance.

Question: *What are the implications of indemnification clauses contained in many HMO and PPO contracts?*

Response: The indemnification or "hold harmless" provisions in many of these contracts simply state that the attending physician is responsible for the quality of care rendered to participants. If treatment is substandard, this clause requires the physician to hold harmless, indemnify and defend the insurer. Although these indemnification provisions have yet to be interpreted in court, the effect of these provisions appear to shift all contractual liability to the physician. An indemnification clause may take the following form:

The Physician shall be responsible for the quality of care rendered to the participants, and agrees to hold harmless, indemnify, and defend the Health Insurance Organization, its employees, officers, and directors, from any and all liability, including reasonable attorney's fees, interests, and costs, arising out of or related to health care provided by the Physician under this contract.

This type of indemnification provision would not have been a serious concern 5 or 10 years ago. At that time, physicians had nearly complete autonomy in diagnosis and treatment decisions. Subsequent contractual arrangements have imposed prior authorization restrictions, utilization limitations and cost containment regulations. These restraints affect the decisionmaking process and, consequently, the quality of care. Decisionmaking is shared, but indemnification provisions give the treating physician complete responsibility for these decisions.

Question: *By signing contracts that contain economic sanctions, do physicians risk more than the expressly stated economic liability?*

Response: Health insurance organizations may insert economic sanctions to compel physician compliance with the contract. For example, contractual provisions relating to prior authorization and utilization regulations may state:

The Physicians will be liable for the expenses of any non-emergency hospitalization not approved in advance by the Plan or the expense of any unauthorized period of hospitalization that extends beyond the length of stay assigned by the Plan.

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In this provision, a physician may be liable for expenses if he or she believes a patient must remain hospitalized for a period beyond that prescribed by the health insurance plan. Sanctions may also be attached to unauthorized admissions and referrals.

These provisions are supposedly an attempt to discourage waste and unnecessary utilization. The public could perceive these economic sanctions as disincentives to practice with the appropriate standard of care. Jurors sitting on medical malpractice cases who are shown these contracts may be highly suspicious of physicians who have discharged a patient prematurely or have made a misdiagnosis that would not have occurred with more extensive testing. Physician acceptance of economic sanctions may suggest they are more concerned with cost containment than with providing adequate health care.

Question: *Are there potential problems with a contract that gives the HMO the power to later modify its terms without the physician's consent?*

Response: Some contracts actually allow the insurer the power to unilaterally modify authorization policies, utilization limitations and sanctions for noncompliance with the contract. Such a provision may state:

The Physician shall adhere to the terms and provisions of the Health Care Delivery Manual published and amended periodically by the Health Insurance Organization.

It is entirely reasonable for a business entity to reserve the right to change its by-laws to facilitate internal efficiency. However, in its extreme form such a clause constitutes egregious overreaching and could become an intolerable interference with a physician's duty to practice medicine responsibly. A physician must not sign a contract that contains such a clause.

Question: *Are there guidelines physicians should follow when negotiating these agreements?*

Response: There are several guidelines physicians must adopt when reviewing arrangements proposed by third-party payors. First and foremost, physicians should give professional liability insurers copies of the proposed contracts. The insurer can offer a useful analysis of the terms of the agreement. This will also inform the physician on

the ways in which the contracts may relate and influence their coverage. Advice from the insurer can be invaluable in negotiating these contracts.

There is no one more qualified than the physician to determine whether the authorization scheme proposed in the agreement is compatible with the standards of responsible medical practice. The physician must negotiate an adequate system for review of treatment or refuse to enter into the agreement.

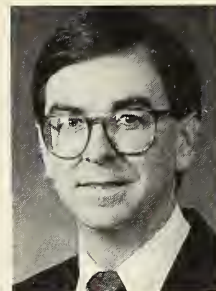
Finally, in negotiating a contract physicians should retain the right to terminate the relationship at any time in the future without cause. The right to terminate without cause allows the physician to escape a program which causes unanticipated problems. This is a critical failsafe provision.

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Recent Books

Holmes, King K., M.D. and Arno G. Motulsky, M.D., Editors, *AIDS: A Guide for the Primary Physician*, University of Washington Press, Seattle, Washington, Paperback, \$15.00. This book is designed as a practical and up-to-date reference for physicians and other health care workers who face an intimidating array of medical, scientific and technical questions against the background of many social, political and economic problems. It provides a foundation for further knowledge in this rapidly changing field. Major scientific and clinical points are clarified in charts, graphs and illustrations. The guide originated as a special edition of *University of Washington Medicine* magazine, a publication of the University of Washington School of Medicine. A CME examination which will award 4 hours of Category I credit is included.



AMA Efforts in Quality Assurance

The author, head of the American Medical Association's new Office of Quality Assurance, discusses how quality medical care can — and cannot — be measured.

Will you describe the AMA's activities in the area of quality care?

Maintaining and improving the quality of medical care has been the central purpose of the AMA since it was established in 1847. The AMA House of Delegates reaffirmed this commitment when it recently adopted the following statement on the quality of medical care:

The American Medical Association is unequivocally committed to ensuring the provision of high quality medical care to all individuals. As a part of this effort, the American Medical Association will aggressively promote organized and systematic quality assessment and quality assurance activities as an integral aspect of day-to-day practice of every physician, regardless of the treatment setting.

In addition to the many AMA programs designed to improve quality, the AMA recently established an Office of Quality Assurance.

Can quality be measured?

Providing quality medical care is an enormously complex process in which many is-

sues, subjective as well as objective, must be considered. What treatment options are available? What are the patient's expectations? What quality of life issues should be considered? Although some aspects of these issues can be quantified, many cannot. Aggregate statistics such as mortality data are inadequate to measure quality. Thus, quality is difficult to measure and even where measurements exist, their precision is often challenged.

If quality can't be measured, what is the role of quality assessment?

The purpose of quality assessment is to improve medical practice by providing physicians with information that will enhance patient care. Statistics such as infection rates, complication rates and mortality rates for specific diagnoses or procedures might provide an effective screening technique for identifying areas that merit further study.

Of course, more detailed analysis and peer review may indicate the quality of care was appropriate. However, if peer review identified deficiencies, strategies for improvement can be designed. Physician participation in this process is essential to assure the criteria used and the review decisions are appropriate.

The Health Data Commission of Iowa is currently considering a proposal to require Iowa

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hospitals to install computer systems to measure severity of illness. What is your assessment of this approach?

Severity of illness is clearly an important factor in evaluating quality. Various computer approaches for analyzing severity of illness information have been developed. Some of these

'Thus, quality is difficult to measure and even where measurements exist, their precision is often challenged.'

techniques provide appropriate adjustments to statistical data. They may also facilitate screening efforts of a hospital quality assurance program.

However, none of the severity of illness computer systems provide an adequate meas-

ure of quality. Although I expect the government, insurance companies and others will continue their efforts to use severity-adjusted data to assess quality, it is important that physicians, legislators and the public recognize the limitations of these data.

As director of the AMA's new Office of Quality Assurance, what do you — and the AMA — hope to accomplish?

The AMA is committed to remaining the leader in efforts of organized medicine to assure and improve the quality of medical care. The Office of Quality Assurance will coordinate existing quality activities within the AMA, act as a liaison with other organizations with major quality activities, evaluate quality initiatives undertaken by other organizations, facilitate development and implementation of effective quality assurance and provide information to physicians to improve the quality of medical care. In addition, the AMA will continue its efforts to influence the impact of laws and regulations on the quality of medical care.

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Des Moines, Iowa

80% of these cysts occur and are managed during childhood and adolescence.³ However, they represent rare causes of neck swelling in elderly population.⁴ This report describes a rare presentation of a multilocular, thyroglossal cyst of enormous size in an elderly woman who sought medical intervention because of the cyst rupture.

Case Report

A 72-year-old white woman was admitted to Iowa Lutheran Hospital, Des Moines, on March 20, 1986. A huge mass of several year's duration in the anterior region of the neck had ruptured and was leaking fluid. The mass had been present for over 20 years with varying degrees of enlargement; over the past 5 years it had enlarged gradually. The patient did not seek medical attention until it ruptured because she had no specific problems other than the disfigurement. She related a mild hoarseness of voice over many years but no respiratory difficulty. She denied symptoms suggestive of thyroid dysfunction. Her past medical history was noncontributory. She took no medications and had had no surgical procedures. Family history was noncontributory.

Vital signs were normal including a blood pressure of 140/70 with no significant postural change and no fever. She was 5'4" tall and weighed 185 lbs. The skin was warm without rashes, lesions or dryness. Fundi were benign and an eye examination was normal. Mucus

The authors describe an extremely rare and enormous thyroglossal cyst occurring in an elderly woman.

ALTHOUGH RARE, thyroglossal duct remnants account for most frequently noted congenital disorders in the neck.^{1,2} Often these remnants form cysts and become evident as slow growing midline neck swellings. Over

Dr. Kabadi, formerly of Des Moines, is an internist with the VA Medical Center in Phoenix, Arizona. Dr. Semenza was a student at the University of Osteopathic Medicine and Health Sciences, Des Moines, when this paper was written and now resides in Springfield, Illinois. Dr. Valin is a family practice physician in Des Moines. Dr. Riley is a general surgeon who also practices in Des Moines.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF OCTOBER 1988

membranes were moist without lesions and the tongue was midline without tremor. A large fluctuant transilluminant, multilocular cystic mass (10" × 6" × 3") on the neck extended to the anterior aspect of chest (Figures 1 and 2). It oozed a chocolate colored, clear fluid from its right inferolateral edge. Although mildly tender with erythematous skin over it, other signs of inflammation (i.e. warmth and exudation of pus) were absent. It was difficult to appreciate any movement of the mass either on swallowing or on protrusion of the tongue. However lateral mobility was elicited. No cervical lymphadenopathy was evident. Indirect laryngoscopy showed normal movement of both vocal cords suggesting no involvement of recurrent laryngeal nerves.

The urinalysis, complete blood count, erythrocyte sedimentation rate and blood chemistries were normal. Arterial blood gases were normal. The thyroid function tests were normal with negative antimicrosomal and an-

tithyroglobulin antibody titers. Electrocardiogram was unremarkable. Chest X-ray showed a huge uniform density extending from chin to the upper 1/3 of the chest, normally aerated lung fields and normal skeletal structures (Figure 3). Thyroid scan with Tech 99 demonstrated normal thyroid tissue superimposed by a very large cystic mass (Figure 4). CT scan of neck confirmed cystic mass which appeared to originate from the hypopharyngeal area superoposteriorly and extending anteroinferiorly to the front of the neck and chest (Figures

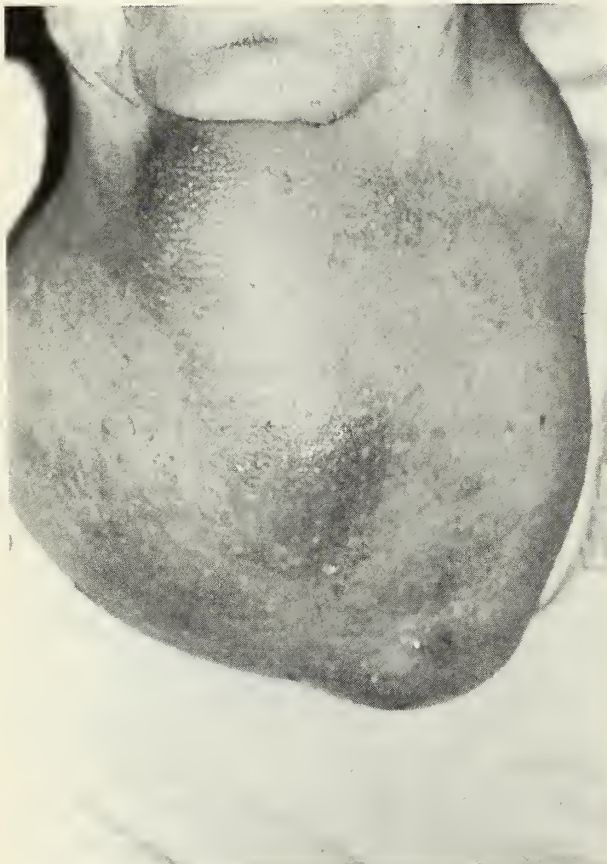


Figure 1. Anterior view of a large neck mass in an elderly woman.



Figure 2. Lateral view.



Figure 3. X-ray of neck and chest showing cyst's enormous size.

5 and 6). The cystic mass was aspirated at the bedside with 20 gauge needle and about 500 ml of clear chocolate colored fluid removed. The fluid showed few red blood cells. No abnormal cells were evident and the culture was negative for growth of microorganisms by 72 hours. On the following day, another 1000 ml of fluid was aspirated in the operating room under general anesthesia and the cyst within its walls was excised in toto. The histopathological studies revealed a benign thyroglossal cyst. The patient had an uneventful recovery

and was discharged on the 5th postoperative day. On reexamination after 2 months, the patient had no complaints and no recurrence was noted.

Comment

Thyroid cysts are usually noted during routine physical examinations in young and elderly alike. However, in the elderly it is a rare finding. Furthermore, it is still a less frequent cause for which the patient seeks medical attention. Its infrequent occurrence in elderly has been well documented. Of 1044 cases reported between 1890 and 1976, 14 occurred in patients age 60-69 and only 6 were found in older subjects.⁴ How many of these presented specifically due to complications of the cyst alone is unclear. In this particular aspect, our patient appears to be unique.

There are several other unusual features which characterized the presentation in our patient. The size and weight of the cyst (>1.5 kg) were enormous. The fluctuant, transilluminant and multilocular nature was unusual as was the lack of manifestation of compression of the adjacent structures like trachea, esophagus and recurrent laryngeal nerves. Fi-

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Figure 4. Tech-99 thyroid scan showing a butterfly shaped thyroid gland superimposed by a huge cystic mass.

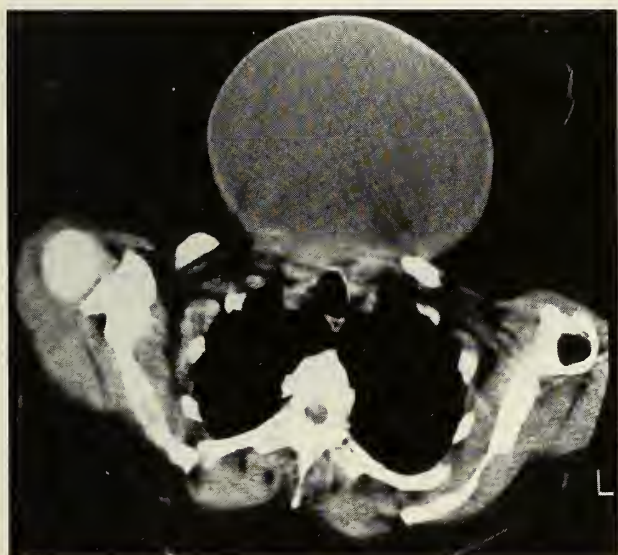


Figure 5. CT scan of neck showing the PA view of a huge cyst.



Figure 6. Lateral view.

nally, the rupture of the cyst with exudation of the fluid is apparently a unique reason for seeking medical attention. This report also illustrates the utility of newer, more precise techniques such as CT scan to discern the anatomical nature of the neck swelling as has been well documented in a recent study.⁵

Conclusion

In this report we describe an elderly woman with a ruptured multiloculated, transilluminant cystic neck mass of enormous dimensions. Almost 1500 ml of chocolate colored clear fluid was aspirated before the cyst was excised in toto. Histopathological examination revealed it to be a thyroglossal duct cyst, an extremely rare presentation in the elderly.

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Controversies in Resuscitation

FRED J. PETTID, M.D.
Omaha, Nebraska

The author, a guest panelist at the 1988 IMS Scientific Session, discusses the medical and ethical implications of 'do not resuscitate' orders. The physician's role in difficult decisions regarding treatment of critically ill patients is discussed.

DRAMATIC CHANGES HAVE OCCURRED in physicians' ability to prolong life. A hundred years ago, only rudimentary supportive care could be offered to most critically ill patients. Doctors now choose from a vast array of interventions that, when combined with effective therapies for underlying conditions, often greatly prolong survival. Unfortunately, the quality of the additional life so skillfully sought can range from marginally tolerable to absolutely miserable.

In a discussion of DNR orders there are general ethical fundamentals which should be recalled. A basic principle of medical ethics is obviously the preservation of life, frequently tempered by a second principle, the alleviation of suffering. A third is the injunction that physicians "first do no harm" (*primun non nocere*). A fourth principle is respect for the autonomy of the patient. A fifth fundamental principle is the concept of justice, exemplified

by an effort to ensure medical resources are allocated fairly.

Patients Have Control

The key to appropriate ethical management of initiating and withdrawing life support is constant awareness of the true source of authority. Patients alone, or their legal surrogates, have the right to control what happens to them. Physicians are consultants engaged to evaluate their patients' problems, present reasonable options for treatment in understandable language and facilitate decision making. Except in emergencies, doctors should proceed with treatments only after those with the true authority have clearly made the decision.

The ability to communicate effectively with patients and families or legal surrogates is one of the most vital professional skills in appropriate decision making. There are several reasons why communication in this setting is difficult for doctors. First, each case is stressful and emotionally wrenching, taking a major physical and psychological toll on the physicians. Second, the cumulation of many such cases exacts a high price from physicians in terms of emotional fatigue and distance, personal fear of death, guilt, insecurity and anxiety. Third, effective communication in catastrophic situations requires time, a scarce commodity for doctors.

Basic life-support measures — providing food, water and supplementary oxygen — are among the most difficult to forego in medical practice because of their emotional implications. Health care professionals may provide these basics of care almost as a reflex, without fully considering whether they are performing a truly caring act.

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Dr. Pettid is with the Department of Family Practice, Creighton University School of Medicine, Omaha, Nebraska.

Once any medical intervention is begun in grave illness, withdrawing it in order to avoid an agonizing dying process requires a direct action that may result in death. Perhaps some of us, frustrated by underlying illnesses that defy medical intervention, gain some sense of control by treating conditions we can treat. Something as simple as starting an IV requires thought. Physicians need to clarify the purpose of placing intravenous lines. Unless a patient oriented goal has been defined, it is not acceptable to begin intravenous therapy for "hydration and nutrition." Once an intravenous line is in place, it becomes harder to refrain from treating the infections and chemical imbalances that might provide a humane release for the patient.

Physicians Initiate Discussions

Even with medical advances, resuscitations at many major medical centers in one year showed only 14-16% of those who received cardiopulmonary resuscitation survived to leave the hospital. Only 19-20% of all patients discussed the procedure with their physicians and in only 35% of the cases was the family consulted about resuscitation. However, over 95% of the physicians claimed to believe such consultations appropriate. Attending physicians must take the lead in discussing DNR orders. If they neglect to do so, family members or nurses (who are likely to be first on the scene) pay a high price, namely anger, guilt and depression.

When considering withdrawing advanced life support:

- Assess the patient's competence.
- Seek unanimity among members of the health care team.
- Vigorously solicit the patient's input regarding withdrawal of treatment. Although most persons on life support will be legally incompetent, any shred of evidence about what the patient wants will be enormously valuable to those who must decide.
- Do not rush decision making with families.
- Establish time-limited goals, based on good clinical judgement and information. "If there are no signs of improvement over the next 72 hours, we believe you should consider withdrawing life support." Temper this with: "We believe your father is suffering and has essentially no chance to regain any

reasonable quality of life, and withdrawing life support would allow him a more peaceful and dignified death."

● An effective way of telling patients or families that you believe life support should be withdrawn is, "It is my best judgement and that of the other doctors and nurses whom I have consulted, that your relative has essentially no chance to regain a reasonable quality of life. We believe life support should be withdrawn, which means your relative will probably die."

● Decisions should be made by the family, friends, health care providers and facilitators. Only rarely is legal assistance necessary (e.g. no family, such as a transient, or otherwise unable to locate the family during the emergency).

Families need assurances that comfort and caring will be maintained and that doctors will not abandon them. Most ethical dilemmas involved in life support can be avoided with careful attention to certain important points. Recognize that authority in medical care rests with patients or their legal surrogates. Support them in exercising this authority. Support patients' rights, particularly the right to give informed consent. Emphasize effective communication.

Enlist a proven facilitator rapidly if communication becomes less than optimal. Recognize that once an intervention is started, its withdrawal can cause problems; nevertheless, in many settings life support should be thoughtfully withdrawn. Finally, being aware of your own feelings and provide emotional support to the other members of the health care team in these difficult cases.

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The Case of the Budd-Chiari Mimic

A 32-YEAR-OLD WOMAN came to University of Iowa Hospitals for evaluation of suspected Budd-Chiari syndrome.

When 6 weeks old a heart murmur was heard and at age 5 she was diagnosed with asymptomatic aortic stenosis. At age 8 a cardiac catheterization showed a severely stenotic bicuspid aortic valve and an open aortic commissurotomy was done. At age 13, due to left ventricular hypertrophy and cardiomegaly, a repeat cardiac catheterization showed residual valvular aortic stenosis and moderate aortic insufficiency. She had mild dyspnea with exertion.

Clinical Findings

At age 31 she was admitted to the hospital because of fatigue, progressive dyspnea with exertion, tachycardia and a 2-week history of intermittent fevers, chills and sweats. Echocardiogram showed left ventricular hypertrophy and aortic insufficiency but no obvious vegetations. Multiple blood cultures grew *Streptococcus sanguis* II and despite penicillin G and gentamicin, her condition worsened.

One week later a cardiac catheterization showed severe aortic insufficiency and an aortic valve ring abscess. The aortic valve was replaced. The postoperative course was complicated by persistent third degree AV block. A permanent pacemaker was required; 6 weeks of vancomycin was administered after surgery.

She did well until 10 weeks after discharge when her abdomen became enlarged. An ul-

trasound showed multiple gallstones and moderate ascites. The peritoneal fluid was a sterile transudate and negative for malignant cells. Peripheral edema soon developed. A laparotomy was done; hepatosplenomegaly and moderate ascites were found. A liver biopsy showed centrilobular congestion with pigment laden macrophages. Budd-Chiari syndrome was suspected. She was sent to U. of I. Hospitals and Clinics for evaluation. Her only regular medication was warfarin; she had never taken birth control pills. She did not smoke tobacco and rarely drank alcohol. She was married with one daughter. A sister had died of acute leukemia.

Temperature was 36.6°C, pulse 78. Respiratory rate was 16; blood pressure was 132/78 mmHg. The skin was not jaundiced, showed no palmar erythema, vascular spiders, telangiectases, Osler's nodes, Janeway's lesions or splinter hemorrhages. There were no palpable lymph nodes. Funduscopic exam was normal. A few bibasilar crackles were heard. Carotid pulses were bounding. Jugular veins were distended to the jaw angle when the patient was upright 45°. Heart rhythm was regular. S1 was normal and S2 sounded mechanical. There was a grade III/VI systolic ejection murmur radiating to the carotid arteries. A grade II/VI early diastolic murmur was heard along the lower left sternal border. Bowel sounds were present. The liver span was 12 cm. The spleen tip was palpable and a fluid wave present. Rectal exam was normal and the stool guaiac negative. There was 1+ edema below the knees. Neurological exam was normal.

The urine had 1+ protein. Complete blood count was normal. Sodium was 142 mmol per

This material is furnished by the Department of Internal Medicine, University of Iowa College of Medicine and is edited by John P. Bennett, M.D.

liter, potassium 4.7 mmol per liter, chloride 109 mmol per liter, carbon dioxide 23 mmol per liter, urea nitrogen 15 mg per 100 ml and creatinine 1.5 mg per 100 ml. Total protein was 5.5 gm per 100 ml, albumin 3.3 gm per 100 ml, calcium 8.7 mg per 100 ml, phosphorus 3.9 mg per 100 ml, cholesterol 135 mg per 100 ml, glucose 82 mg per 100 ml, uric acid 8.8 mg per 100 ml, LDH 352 U per liter, AST 40 U per liter, total bilirubin 0.8 mg per 100 ml, ALT 31 U per liter, alkaline phosphatase 106 U per liter and gamma GT was 46 U per liter. Protime was 15 seconds and partial thromboplastin time was 28 seconds. Erythrocyte sedimentation rate was 12 mm per hour. Hepatitis screen was negative.

Chest X-ray showed severe cardiomegaly, bilateral pleural effusions and pulmonary venous congestion. Electrocardiogram showed a paced pattern with 100% capture. Ultrasound vascular doppler study showed the 3 main hepatic veins and inferior vena cava IVC dilated but patent. Echocardiogram showed left atrial enlargement, aortic insufficiency and mitral annular calcification. Abdominal CT showed ascites, absent left kidney and no evidence of portal vein thrombosis. Radionuclide ventriculogram (IVG) showed a hyperdynamic, slightly enlarged left ventricle with an ejection fraction of 87%. The right ventricular ejection fraction was 59%. There were no regional wall motion abnormalities.

A diagnostic procedure was done.

Clinical Discussion

Gerald F. Dibona, M.D., Internal Medicine: This woman was born with a stenotic bicuspid aortic valve which caused her subsequent problems. Cardiac catheterization at age 8 showed severe aortic stenosis necessitating an open aortic commissurotomy. Five years later a second cardiac catheterization showed residual valvular aortic stenosis and aortic insufficiency. Given this substrate of a stenosed congenitally abnormal aortic valve, surgically traumatized and with residual stenosis and insufficiency, the next clinical event initiated a sequence of events related to this pathologic aortic valve.

Subacute bacterial endocarditis (SBE) was easily confirmed. Infective endocarditis on severely damaged valves often pursues a complicated course. A third cardiac catheterization disclosed an aortic valve ring abscess, proba-

bly accounting for persistent fever, and severe aortic insufficiency, probably accounting for the general clinical deterioration.

After replacement of the aortic valve and surgical debridement and drainage of the infected tissue, things improved under pro-

'The physical exam was notable for absence of fever, signs of acute or chronic liver disease or skin manifestations of SBE.'

longed antibiotics. Development of persistent third degree AV block suggests damage from the infected valve affected the conduction system.

All seemed well until 10 weeks following discharge when the abdomen swelled. Evaluation confirmed simple transudative ascites and incidental gallstones. Peripheral edema followed. A laparotomy was done and hepatosplenomegaly and ascites were found. I suspect the hepatosplenomegaly was present on preoperative physical examination and the ascites was already known. The intraoperative liver biopsy showed centrilobular congestion with pigment laden macrophages.

This pathologic finding has been frequently associated with hepatic vein occlusion or the Budd-Chiari Syndrome. However, it can be seen in many conditions which acutely raise right heart chamber pressures, particularly right atrial pressure, with transmission of the increased pressure into the vena cava and the hepatic veins.

The physical exam was notable for absence of fever, signs of acute or chronic liver disease or skin manifestations of SBE. Jugular venous pressure, reflecting right atrial pressure, was markedly elevated and both systolic and diastolic murmurs were heard in the aortic listening areas. Although heart sounds were normal/mechanical and the arterial pressure did not suggest wide open aortic insufficiency, bounding carotid pulses were seen.

Laboratory values showed slightly low total serum protein and albumin and slightly high uric acid and LDH. Chest X-ray showed

congestive heart failure with cardiomegaly, pulmonary venous congestion and bilateral pleural effusions. Electrocardiogram showed the pacemaker as one of the few things working normally. Ultrasound vascular doppler study showed the 3 main hepatic veins and the IVC to be dilated and patent as if they were experiencing high intraluminal distending pressure.

Echocardiogram showed left atrial enlargement (consistent with increased left atrial pressure and pulmonary venous congestion seen on chest X-ray), aortic insufficiency (consistent with diastolic murmur in aortic listening area) and mitral annular calcification. Abdominal CT scan again confirmed ascites, and showed no evidence of portal vein thrombosis. IVG showed hyperdynamic left ventricle with an ejection fraction of 87% and a 59% right ventricular ejection fraction without regional wall motion abnormalities.

Budd-Chiari Syndrome (occlusion of the hepatic veins) is an uncommon illness characterized by abdominal pain, ascites, hepatosplenomegaly and a poor prognosis. A reasonable differential diagnosis includes: paroxysmal nocturnal hemoglobinuria, myeloproliferative disorders, carcinomas which invade the IVC and/or portal vein and extend to hepatic veins, pregnancy, trauma, use of oral contraceptive pills, radiation therapy, abscess and membranous diaphragms or webs of the IVC involving the hepatic veins.

Ascites and hepatomegaly are uniform with abdominal pain and splenomegaly only slightly less common. Jaundice is unusual. The ascites is a transudate and other laboratory abnormalities are inconstant with mild elevations of bilirubin, aminotransferases and alkaline phosphatase in less than one-third of patients. Liver scan shows a central area of tracer uptake surrounded by areas of decreased tracer uptake. The central hot spot represents a hypertrophied caudate lobe whose venous drainage is not via the hepatic veins but by a separate system of veins to the IVC. Ultrasonography and CT can show whether the hepatic veins, portal vein and IVC are patent or occluded. Catheterization of the IVC from above and below with visualization of the hepatic veins is the gold standard for confirming the diagnosis.

Constrictive pericarditis, tricuspid insufficiency, right atrial tumors and congestive

heart failure with severely elevated right atrial pressure may mimic Budd-Chiari Syndrome. I believe this patient has severe congestive heart failure associated with markedly elevated right atrial pressure which mimics Budd-Chiari Syndrome. She never took oral contraceptives and was on chronic anticoagulant therapy. She apparently lacked abdominal pain. Moreover, the diagnostic studies, short of IVC and hepatic vein catheterization, showed the IVC, portal vein and hepatic veins not occluded but patent.

'Constrictive pericarditis, tricuspid insufficiency, right atrial tumors and congestive heart failure with severely elevated right atrial pressure may mimic Budd-Chiari Syndrome.'

Signs of heart disease are numerous. She had cardiomegaly with evidence of both left- and right-heart failure. The murmurs fit best with aortic stenosis and aortic insufficiency, the latter despite a new aortic valve. The increase in right atrial pressure is reflected by the high jugular venous pressure. Other causes of increases in right-sided heart chamber pressures reduce to the differential diagnosis of pulmonary hypertension but there is little evidence to support chronic pulmonary disease, recurrent pulmonary emboli or chronic hypoxemia. However, left-to-right shunts as occur with congenital heart disease can produce a hyperkinetic form of pulmonary hypertension. This woman had a congenital bicuspid aortic valve not associated with a left-to-right shunt. Subsequent events may have led to an acquired left-to-right shunt and increased right-sided heart chamber pressures.

The physical exam does not fit with constrictive pericarditis since this would produce right-heart failure with little or no sign of left-heart failure. Tricuspid insufficiency was not reflected by systolic increases in jugular venous pressure or a pulsatile liver. The char-

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acter, location and radiation of the murmur is not that of tricuspid insufficiency.

Since clinical deterioration occurred after insertion of the new aortic valve and the murmur of aortic insufficiency suggests that it is leaking, thought should be given to recurrent SBE with abscess formation and partial unseating of the valve.

I suspect a cardiac catheterization was the chosen diagnostic procedure. I would have focused on: 1) documentation of elevated pressures in the right side of the heart, particularly the right atrium; 2) evidence of a loose aortic valve with aortic insufficiency; and 3) evidence of a recurrent and/or persistent paravalvular abscess with possible extension to the sinuses of Valsalva and development of a fistula between the sinus of Valsalva and the right side of the heart, more likely between the right atrium than the right ventricle. These events would explain worsening left-heart failure from

development of aortic insufficiency and the abrupt onset of right-heart failure and very high right atrial pressure from the formation of a left-to-right shunt.

I predict cardiac catheterization would demonstrate: 1) increased right atrial, right ventricular, pulmonary artery and pulmonary artery wedge pressures; 2) an oxygen step up in the right atrium compared to the IVC or a peripheral mixed venous site; 3) an abnormal green dye dilution curve; 4) fistulous tract between the aortic root and the right atrium; and 5) patent hepatic veins.

Diagnostic Procedure

A cardiac catheterization was the diagnostic procedure and identified a large fistula between the aortic root and right atrium with a calculated left-to-right shunt of 2.5 to 1. Right heart pressures were elevated and there was 2+ aortic insufficiency.

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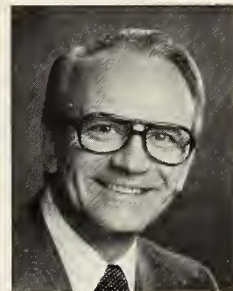
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The Editor Comments



Quality of Care

WE HEAR MUCH ABOUT QUALITY today. We hear "quality of life" and "the quality goes in before the label goes on." Now we list "quality of care" as a responsibility of medical practice. Quality has numerous connotations. It may be the nature of something. Quality may imply excellence, stature or distinction. In the final analysis quality is that which is excellent or first rate.

The other key word is "care." There are numerous synonyms for this term: concern, regard, protection, ministration and responsibility. It is our responsibility to minister with true concern for the welfare of our patients. Isn't that what it's all about?

Other segments of society have a broader definition of quality of care. The economically-minded often equate quality with the "most for the least cost." There is no argument with being cost-conscious if quality remains unblemished. There is concern regarding the cost of such procedures as organ transplantation, open-heart surgery and lithotripsy. The Prudential Life Insurance Company recently announced its "Institutes of Quality" program wherein a few medical centers are designated for transplants or lithotripsy for corporate subscribers. None of the hospitals are in Iowa.

There are many excellent centers of specialized medical care. For an insurance company to select only 12 for thousands of procedures appears ludicrous. The company concedes that other institutions have quality, but in many instances a price agreement

could not be reached. There it is — the bottom line — cost-cutting. Before an avalanche falls on me I hasten to add there is nothing wrong with cost-cutting as long as the *quality of care* remains. The patient, family, friends and the physician each have a stake in the total care. As much as possible, the patient must have freedom of choice in the quality of the care received. There are arguments on all sides, but what we must fear is that this is the beginning of "third parties" dictating where and when the patient may receive medical care (if at all).

Now, we must consider the total picture of quality of care and more specifically the *humane* aspects. In the final analysis we must conclude life is precious, rights are inalienable and the sick person is entitled to compassion.

There is one more facet to be mentioned; and some in our profession may be offended. Quality of care for our patients must be free of avarice. Hospitals, physicians and providers of medical supplies and equipment must be realistic about economics. Unfortunately, this follows current economic trends. Products cost more, taxes sneak into the picture, services are more expensive, etc. Medicine is not the only costly service. Our entire social structure needs to be viewed in an astute way. Hippocrates said it well — "Where there is love of humanity there will be love of the profession." Let's all work together, not against each other. — M.E.A.

A Search for Unusual Cases

Medical cases are varied and challenging. All are not textbook in character. Some are exciting, some nearly unbelievable and some just interesting. The editors of *IOWA MEDICINE* believe our readers can recall some interesting cases encountered in practice. This issue relates an interesting case reported by Doctors Kabadi, Semenza, Valin and Riley. Several years ago we published a paper by Doctor John Sunderbruch relating a medical challenge presented by a man who had slipped a machine steel bearing over his penis (*JIMS*, January 1977, page 16). We also published a case report involving a rambunctious cat (*JIMS*, January 1982, page 19).

During my internship and residency years I "moonlighted" for a physician in a small community near Des Moines. A small child I saw at a home visit had a distinct odor of onions. Upon opening the clothing I encountered a thick layer of fried onions on the child's chest. I've often wondered if the onions or the antibiotic I prescribed received the credit for clearing the infant's pneumonia.

Surely, many of our readers recall an incident or an interesting case encountered in their practice. We do not seek long case reports, nor must they be scientific in the purest sense. Please share your experiences with us and our readers. — M.E.A.

Historical Vignette

History of Warren County Medical Society

I was fortunate to come into possession of some old records of the Warren County Medical Society that were supposedly lost for the past 35 years. At the time Dr. Ernest E. Shaw and I were inducted into the Armed Forces in 1942, we closed our office and turned our records over to our office nurse and bookkeeper and they were stored in her attic. The society records were also stored with personal records since Dr. Shaw was the secretary. These latter records were presumed lost until they were located by a

granddaughter of our former nurse. For all practical purposes, these records begin with the reorganization on October 16, 1903, conducted by the councilor, E. E. Darr, M.D., of Des Moines. Those present: Dr. E. E. Darr and local physicians O. P. Judkins, H. C. and J. D. McCleary, F. C. Hull, Park, Surber, Curless, Hatfield, M. L. Hooper, Kemper, J. Mary Bechtell, Dashiell, Sperrow, Porterfield and Baker. This reorganization came at the urging of the A.M.A. and the State Medical Society.

The Warren County Medical Society was organized in July, 1865 (according to the 1879 Warren County History). Original members were C. W. Davis, M. A. Dashiell, J. D. McCleary, C. B. Lake, A. J. Applegate, J. I. Wakefield and S. P. McClure. Meetings were held quarterly after 1869. As of 1879, the membership consisted of the above plus: J. D. Blake, T. S. Parr, W. S. Hull, T. W. Baugh, E. L. Baker, J. D. Holmes, W. M. Park, S. B. Miller, Thomas F. Kelleher, J. C. Marietta, J. H. Nichol, L. H. Surber and W. C. Davis. Aside from these members, there were 17 physicians in the county who were non-members, making the total of 35 physicians, one for every 600 population in 1865.

The local physicians were trained in many medical schools including Chicago Medical, Rush, Keokuk Medical College, Hahneman College of Philadelphia, Iowa Eclectic Medical College, Eclectic Medical College Cincinnati, Iowa State University, Drake University, and the University of Maryland. Several were licensed by the "practice act" after apprentice training and examination.

After 1886, when the State Board of Health was organized, a license was required to practice. Before that time a physician could start treating patients merely by opening his own office and hanging up his shingle.

During the latter part of the 1800's there were 30-35 physicians widely spread through the county, nearly every little community having at least one. Since that time, the number of M.D.s has been shrinking. In 1936 there were 14 doctors in active practice: **Indianola** — L. E. Hooper, C. H. Mitchell, E. E. Shaw, C. A. Trueblood, O. P. Judkins, J. Humphrey, Rose Butterfield; **Carlisle** — W. E. Sperrow; **Milo** — I. C. Taylor; **Lacona** — J. Loosebrack, C. Demaree; **New Virginia**

— G. A. Jardine; **Liberty Center** — J. Moore; **Norwalk** — M. B. Cunningham. Replacements were so few that by 1976 the number had dropped to 4. The proximity to Polk County and Des Moines helped to alleviate this shortage to some degree but not without hardship to the public and practicing doctors.

The fact Warren County has no hospitals makes it necessary for each physician to equip his office as an emergency room and be prepared to serve the public long hours. The county has had privately owned hospitals — one owned and operated by Dr. Geo. Alden from 1919-20 (approximately) and the Indianola Hospital operated by a succession of nurses from 1934 until 1952. Most of the surgery done there was by Des Moines surgeons who came with sterile instrument packs and often their own anesthetists. The surgeon was assisted by the family physician. By 1952, stricter rules for hospitals made it impossible to continue a facility with a small number of beds.

In 1961, Warren County Medical Society merged with Polk County since the membership had dropped too low to maintain an active organization. — *Clare A. Trueblood, M.D., Indianola.*

Letters to the Editor

Right to Life Should Prevail

To the Editor:

The surgeon-general is leading a massive educational campaign against AIDS. It seems obvious the medical profession has voluntarily enlisted to teach the message. This seems futile when much more effective components of society — the entertainment and pornography industries — persist in teaching the opposite message. Messages advocating non-marital sex are probably 30 times as numerous as AIDS education messages.

If physicians offered the public the same AIDS message as is offered on television, we would be liable for massive malpractice suits. The porn and entertainment industries are permitted to be irresponsible; doctors are not.

I think we should call for state legislation which would require everyone to speak with a united voice. Diversity of opinion on this issue should not be permitted. The facts are equally clear to everyone. Such legislation could be proposed by the IMS and/or each physician could contact legislators.

Here is the language I propose: "The advocacy, defense, support or encouragement of high risk behaviors which transmit the causative agent of AIDS are prohibited. These behaviors are intravenous and intramuscular drug abuse, anal intercourse and non-marital vaginal intercourse."

This is an obvious limit on free speech. It would suppress the porn industry absolutely and would suppress the entertainment industry in its present form. Freedom of speech has never been absolute. The Supreme Court has clearly stated there is no right to cry "fire" in a crowded theater. To advocate high risk behavior presents an equivalent threat to life.

A fairly new concept is that rights must be prioritized. Not all rights are of equal value. When an issue crystallizes as a conflict between 2 rights, one must yield. The right to life is probably supreme over all other rights. In the recent Terasoff case in California the conflict was between the right to privacy and the right to life. The right to life prevailed. My guess is the right to life will prevail over freedom of speech and freedom of the press. To advocate high risk behavior constitutes reckless endangerment of human life. — *Clinton E. Berryhill, M.D., Williamsburg, Iowa.*

Therapeutic Drug Substitution

To the Editor:

The purpose of this letter is to inform Iowa physicians of the potential for problems in the area of therapeutic drug substitution and suggest courses of action.

Therapeutic substitution is the practice of substitution by a pharmacist of a different medication (with the same therapeutic effect) for the drug prescribed by the physician. As practiced in many settings, the physician may have no knowledge of the fact the patient receives an entirely different medica-

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tion from that prescribed. Physicians in a number of states have vehemently objected to therapeutic drug substitution, pointing out quality of care could be seriously compromised by different side effects and contraindications. In the absence of a full medical history, physical and diagnosis, the pharmacist has no way of knowing that a different drug may be contraindicated for a patient.

Certain states, notably Wisconsin, have legislation allowing therapeutic substitution only in hospitals under carefully controlled conditions with physicians approving every substitution. This type of regulatory statute has been deemed necessary and supported by medical and osteopathic societies due to the rapid rise of managed health care systems which advocate therapeutic substitutions in outpatient settings as a cost-saving measure.

Many physicians are facing the dilemma

of initial affiliation or yearly renewal contracts with HMOs. Many HMOs are advocating therapeutic substitution in the outpatient setting and have placed clauses in their physician contracts to mandate such substitutions.

As a result, the legislative committee of the Iowa Academy of Family Physicians recommends that:

- Physicians reviewing HMO or other managed health care contracts should read them carefully to determine if a therapeutic substitution clause is included.
- Physicians should not sign a contract which includes a therapeutic substitution clause or request the clause be deleted.
- Physician groups such as the Iowa Medical Society and the Iowa Osteopathic Medical Association should support legislation restricting therapeutic substitution to inpatient settings. — William G. Artherholt, D.O., Red Oak, Iowa.

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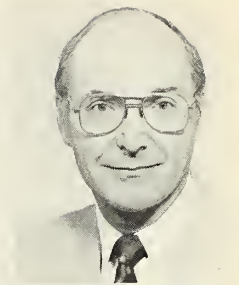
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CME Notebook



A Terrible Beauty

REMEMBER THE WORD "OXYMORON," the linguistic device that places together 2 words that ordinarily contradict each other's meaning, image or effect? Examples abound: "charming massacre," "complex simplicity," "tall shortness," and some would suggest "military intelligence," or even "hospital food." Sometimes arising through inadvertence, such combinations may also reveal the careful crafting of speakers or writers seeking a dramatic or poetic impact.

This rhetorical device came to mind when I read a poem by the greatest modern Irish poet, William Butler Yeats. He wrote "Easter 1916" in September of that year, responding to the Irish Declaration of Independence, proclaimed from the steps of the Dublin Post Office. Those central to the uprising were executed for their trouble. But since their effort attained success 7 years later, their names and martyrdom are well known to the Irish. In awe, Yeats reacts to the seeming unlikelihood that the 4 ringleaders would have proven heroic. Yet they were, and are remembered now most visibly by a tragically uplifting statue in a beautiful small park near the Dublin Post Office. Sitting in that park, I re-read his poem. The combination — memorial park plus poem on the same topic — was deeply affecting, memorable. The 3 long stanzas end with al-

most identical couplets, each containing the impressive oxymoron: *All changed, changed utterly:/A terrible beauty is born.*

The repetition, "changed, changed utterly" followed by the freshness of "terrible beauty" captured my imagination and evoked an analogy with contemporary events in American health care. First, the enormous changes of the past decade now seem enough to warrant the emphasis, changed *utterly*. Second, many (most?) American physicians would likely agree that the changes warrant the term "terrible," but not acknowledge that "beauty" is at all applicable. What is poetry about, though, if not to provoke a lively new perception? Can a case be made for "beauty" to describe the health care scene now evolving? That depends on how we use today's events and opportunities. Might beauty in this medical context refer to enhanced quality, growing out of more accurate information and more effective tools to assess and manage patient problems, these in turn producing better health outcomes along with greater patient satisfaction, and these in turn prompting greater physician gratification?

Yeats wrote his telling oxymoron in 1916. With hindsight from 1988 we can say the Irish Revolution was roughly synchronous with the Flexnerian revolution in American medical education. The reforms urged by Flexner and his supporters in that era helped produce our era of technological

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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YOCON®

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

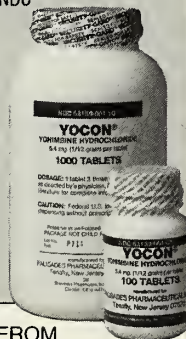
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

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sophistication that performs seeming miracles in solving distresses of human form or function. To gain these skills, we now see clearly, we have paid a price regarding the kind of social milieu where medicine is practiced and the proportion of physician effort given to caring for patients.

Increasingly it's recognized that our education and profession warrant major reforms. Technological excellence on the one hand, and the human values of concern and compassion on the other (with their behavioral correlates), need not be mutually exclusive. (A cupful of water can be poured into a cupful of straight pins without a pin or a drop of water spilling over — a parlor trick from my youth.) Through educational effort, work of professional associations, and legal and other social pressures, we might retain a combination of technical brilliance along with full attention to our patients' humanity. If so, the beauty can be regained. "Terrible" in this context may come to emphasize its less-remembered positive meanings: majestic, imposing, awe-inspiring.

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Cash Management

IN THE PAST, HAVING CASH in the checking account meant a strong, well-managed organization. Now, cash in the checking account is viewed as a sign management is not making good use of money available for investment. Good cash management involves receiving money quickly, holding on to it as long as possible, monitoring cash needs and cash availability and investing excess cash at the highest possible interest rate while considering risk and need for liquidity.

Benefits

Good cash management improves net income by increasing interest income or reducing interest expense. It will also give management advance notice of additional cash needs in time to make favorable financial arrangements. The following chart illustrates the pre-tax impact of using cash for 5 more days assuming a 7% short-term investment rate up to 12% borrowing rate. For example, if a company with revenues of \$5,000,000 can improve its average daily collected balance by 5 days and invest that money at 7%, pre-tax income will increase by \$7,000 (Revenue/250 Business Days × Additional Days' Use × Interest Rate).

CASH MANAGEMENT SAVINGS
PRE-TAX IMPACT
COMPANY SIZE IN REVENUE

Interest Rate	\$1,000,000	\$5,000,000	\$10,000,000	\$20,000,000
7%	\$1,400	\$ 7,000	\$14,000	\$28,000
10%	2,000	10,000	20,000	40,000
12%	2,400	12,000	24,000	48,000

This article is authored by Todd Peterson, a partner located in the Cedar Rapids office of McGladrey, Hendrickson and Pullen, Des Moines, Iowa.

Collecting Quickly

Billing patients for services rendered and receiving and depositing payments are the key functions which affect cash availability. Bills for goods or services should be generated promptly.

Receiving and depositing checks is the second critical part of collecting quickly. Checks should be deposited on the day they are received in time for same-day processing. A post office box may be an inexpensive way to receive checks early enough to process the same day. Mail usually can be picked up at the post office much earlier than it is delivered. To save sorting time, several post office boxes can be used for separate types of payments. Remittance envelopes will help ensure payments are mailed to the proper location.

Paying on Time

Vendors should be paid on the due date unless a discount is allowed for early payment. Most discounts provide substantial financial incentives and should be taken. All discounts should be evaluated. Foregoing a 2%/10, net 30 day discount is equivalent to paying 36% annual interest for 20 days.

Budgeting

An organization's operating and capital budgets are critical tools of cash management. A budget is an integral portion of a cash management program because it allows you to review the future level and timing of cash needs or surpluses. This review will help in investment decisions by allowing you to make longer term investments (30 days), which yield higher rates, and in decisions to seek additional cash at favorable terms when necessary.

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Monitoring and Using Available Cash

It is not enough to know your cash balance in the checkbook because banks do not give immediate credit for deposits the day they are made and cash is not withdrawn the day checks are written. Companies should strive to manage *available* cash, not *checkbook* cash, to improve operating performance. Cash is not available for investment until funds for checks have been collected. Preparing accurate cash budgets will involve working with the bank to determine the length of float for checks and deposits.

You should receive a monthly account activity analysis statement from the bank. It will

show average available cash balances for the month and fees charged for maintaining the account. If there is a large balance after the service charge adjustment, too much cash is being left in the account. Excess funds can be used for various short and long-term investments such as repurchase agreements, sweep accounts and money market accounts. Each investment should be analyzed as to level of risk, term and yield.

Conclusion

Once good cash management procedures are established, little work is required to perform the necessary cash management tasks and the bottom line benefit can be substantial.

August 1988 Morbidity Report

Disease	Aug. 1988 Total	1988 to Date	1987 to Date	Most Aug. Cases Reported From These Counties	Disease	Aug. 1988 Total	1988 to Date	1987 to Date	Most Aug. Cases Reported From These Counties
AIDS	3	29	28	NA	Malaria	0	1	4	
Amebiasis	1	12	22	Johnson	Meningitis				
Brucellosis	0	1	3		aseptic	0	19	40	
Chickenpox	4	6423	7581	Black Hawk, Johnson, Linn, Scott	bacterial	3	74	59	Hardin, Iowa, Linn
					meningococcal	0	0	3	
Campylobacter	47	297	270	Scattered	Mumps	0	33	385	
Cytomegalovirus	1	5	18	Black Hawk	Pertussis	0	20	32	
Eatons Agent					Rabies in animals	11	115	195	Scattered
Infection	0	21	44		Reye Syndrome	0	0	0	
Encephalitis, viral	0	8	3		Rheumatic Fever	0	1	2	
Erythema					Rubella				
Infectiosum	0	107	880		(German				
Gastroenteritis					measles)	0	0	1	
(GIV)	67	13894	10806	Scattered	Measles	0	0	0	
Giardiasis	39	222	242	Scattered	Salmonellosis	28	145	105	
Hepatitis, A	1	35	82	Adair	Shigellosis	26	165	37	Scattered
Hepatitis, B	8	66	90	Scattered	Toxic Shock				
Hepatitis, Non					Syndrome	1	5	5	Story
A-B	2	13	23	Buchanan, Dubuque	Tuberculosis				
Hepatitis					total ill	9	35	31	Scattered
type unspecified	0	2	5		bact. pos.	5	28	31	Scattered
Herpes Simplex	82	675	800	Scattered	Typhoid Fever	0	0	0	
Herpes Zoster	0	0	2		Venereal diseases				
Histoplasmosis	0	12	9		Gonorrhea	140	1350	1978	Scattered
Infectious					Chlamydia	404	2895	2343	Scattered
mononucleosis	0	94	131		Syphilis	1	16	19	Blackhawk
Influenza,									
lab confirmed	0	110	67						
Influenza-like									
illness (URI)	95	25676	24702	Scattered					
Legionellosis	1	14	6	Cedar					

Other Non-Reportable Diseases: Q Fever — 1, Johnson; 1, Tama; Enterovirus Type 71 — 1, Johnson; 1, Polk; Ureaplasms Urealyticum — 1, Johnson; 1, Mahaska; 1, Marion.

Drug Therapy of Genitourinary Cancer

IN SHARP CONTRAST to the response demonstrated in testicular cancer, results achieved by the chemotherapeutic approach to treatment of tumors of the bladder, prostate, kidney and penis have not been encouraging (thus far). One exception is the use of combination chemotherapy in advanced bladder cancer; preliminary data in this area are promising. Evaluation of results obtained in carcinoma of the prostate has been complicated by difficulty in quantitation of response.

Transitional Cell Carcinoma of the Bladder: Topical Chemotherapy

The introduction of podophyllin instillations by Semple in 1948 has been followed by a number of other attempts to reduce the recurrence rate of superficial low-grade bladder carcinomas. Ease of administration, the multifocal nature of bladder cancer and the high local recurrence rate of superficial tumors contribute to widespread use of topical chemotherapy in treatment of superficial bladder cancer. Intravesical instillation of antineoplastic agents is advocated in the following clinical situations: incompletely resected tumors, tumors on the anterior wall of the bladder and multi-focal tumors or multiple areas of carcinoma in situ or dysplasia.

Adjuvant topical chemotherapy is also used for high-risk patients after resection.

Thiotepa: The most widely used intravesical agent is triethylenethiophosphoramide, or Thiotepa®, an alkylating agent. Complete con-

trol rates of 23 to 53% are reported with this agent. National Bladder Cancer Collaborative Group A investigated the efficacy of prophylactic Thiotepa for patients determined to be cystoscopically free of tumor.¹ In the treated group, 72% and 69% were free of disease at 12 and 24 months compared with 42% and 27% in the control group.

Mitomycin C: Mitomycin, an antitumor antibiotic with the ability to selectively inhibit DNA synthesis, has the properties of an alkylating agent. Mishina et al. published the first report of intravesical therapy with Mitomycin C.² It appears Mitomycin C is as effective as Thiotepa in the treatment of existing lesions, and in view of its lack of systemic absorption and toxicity, clinical trials to study the prophylactic efficacy of this agent are now in order.

Adriamycin: Adriamycin, an antitumor antibiotic known to be active against bladder cancer when administered systemically, has been used intravesically with varying success. It appears to be a third alternative to Thiotepa, one that deserves further study and has the advantage of lacking systemic absorption and toxicity.

Bacillus Calmette-Guerin (BCG): This seems to have advantages both as a prophylactic and therapeutic agent. The responses appear to be more durable compared to other chemotherapeutic agents, especially for carcinoma in situ.³ The effects of BCG in patients with superficial bladder cancer are currently being studied.

Adjuvant Chemotherapy

Various chemotherapeutic agents have been used in the adjuvant setting. The most active agent, cis-platinum, has been used in

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several protocol studies in combination with radiation therapy for patients with muscle invasive bladder cancer. Seventy patients with muscle-invasive bladder cancers who were not candidates for cystectomy were treated with a combination of cisplatin and full-dose external beam radiation in a multi-institutional prospective study from 1980 through 1985. A complete response rate of 77% was reported for the 62% completing planned irradiation and 70% for all patients. These response rates observed in all stages, in conjunction with high survival rates, suggest that the combination of irradiation and cisplatin may offer an important therapeutic advantage over radiation therapy alone for invasive bladder cancer.⁴ Longer follow-up will be necessary to determine if the observed high initial complete response rate of the tumor indicates real, lasting benefit for these patients.

Systemic Chemotherapy

The goal of combination chemotherapy is to combine single agents with known activity into programs that enhance antitumor effects without intensifying the problems associated with any single drug toxicity. The immediate goal is to increase both the number and duration of complete responses, which in bladder cancer have been very few with the use of single-agent therapy. The study of combination therapy suggests significant activity is seen only in combinations that include cis-platinum, except for the surprising efficacy reported with the Adriamycin-5-fluorouracil combination.⁵

Two combination chemotherapy regimens, cisplatin/methotrexate/vinblastine (CMV) and methotrexate/vinblastine/Adriamycin/cisplatin (MVAC) are currently being evaluated for use in patients with metastatic bladder cancer.^{6, 7} Although initial response rates are promising, long-term cure rates are as yet unknown. An additional treatment modality to be considered in the future is the use of combination chemotherapy with adjuvant radiation therapy with or without the use of salvage cystectomy.

Carcinoma of the Prostate

The number of patients who exhibit complete or partial clinical response to chemotherapy is small. Several factors that may be responsible for this low rate are 1) patients

have already failed systemic hormone therapy, 2) most prostatic tumors are believed to have growth fractions under 5%, resulting in slow doubling time, and 3) most patients have extensive tumor burden at the time they become hormone refractory.

Only cis-platinum, Adriamycin, 5-fluorouracil, and cyclophosphamide, the single agents most commonly used in prostate cancer, have objective remission induction capability of greater than 20%, the accepted criterion for minimum efficacy of a chemotherapeutic regimen.⁸ Initial optimistic reports of the use of combination therapy could not be repeated in multi institutional trials. This is not surprising since there are few single agents with significant response rates for prostatic cancer.⁵

Steroidal Alkylating Agents

The concept of developing chemical conjugates of steroid hormones and antineoplastic agents relates to the presence of steroid specific receptors in the nucleus and cytoplasm of normal cells from male target organs and tumor cells with primary cells in those organs. The National Prostatic Cancer Project has conducted a number of clinical trials comparing estramustine (Estracyt/Emcyt®) alone and combined with other agents.⁹ An estramustine-induced objective response was seen in only one out of 38 patients treated. The further use of estramustine to attempt to induce objective remissions in hormonally resistant prostatic cancer, therefore, hardly seems warranted.

A second steroidal alkylating agent, prednimustine (Leo-1031), has been studied in the treatment of prostatic carcinoma. In this study conducted by the National Prostatic Cancer Project, only one patient out of 54 tested with the prednimustine-estramustine combination achieved an objective remission.¹⁰

Agonists

With the discovery of gonadotropin-releasing hormone and its analogs with their demonstrated ability to suppress Leydig cell function in experimental animals and in man, the next obvious question was that of efficacy of these compounds in treatment of human prostatic cancer. Comparing LHRH agonists with DES has shown no statistical difference between the 2 treatment modalities in terms of response and time to progression. How-

ever, fewer side effects were observed with patients receiving LHRH agonists.

Flutamide in humans was compared with DES from 1973 to 1974 and found to yield similar responses in all groups treated. Side effects of flutamide consisted only of breast tenderness and gynecomastia, both of which were less pronounced and occurred later than the same effects experienced by patients on DES.

LaBrie recently reported the efficacy in animals of the combination of an LHRH agonist and a pure antiandrogen (flutamide). He observed a positive response rate in more than 90% of untreated patients receiving this combined therapy. Time to progression and survival were also markedly superior to historical controls treated with DES or with orchiectomy only.¹¹ Studies in this country, however, have not been able to confirm his results.¹²

Kidney Neoplasms

Numerous clinical trials have explored the role of hormonal therapy and chemotherapy in the treatment of renal cell carcinoma. Progestins have remained the most actively studied form of hormonal therapy and have been associated with response rates ranging from 0 to 20%. Other hormonal agents including antiestrogens and combinations of hormones and chemotherapy have also been associated with response rates usually less than 10%.

Many studies of single-agent chemotherapy have been done, with most agents showing minimal or no activity. The most active drug has been vinblastine, with a response rate of approximately 20% in collected series. Almost all other single agents have had less than 10% response, although many trials were conducted using a small number of patients, making conclusions concerning drug activity uncertain.¹³

In Combination Chemotherapy

Progestins, vinblastine and nitrosoureas, which appear to demonstrate some activity in single-agent regimens, have been the main agents included in experimental combination regimens. However, response rates and survival have not been significantly better than those for single-agent therapy.

Interferon Therapy

Several investigators have studied interferon with recurrent or metastatic renal cell

cancer.¹⁴⁻¹⁶ Initial trials used human leukocyte interferons derived from virus-stimulated buffy coat leukocytes. These interferon preparations were impure, tedious to prepare, and required large amounts of blood products for preparation. Estimation of results from clinical trials indicates that 16% of the patients with metastatic renal cell cancer displayed complete or partial response to interferon therapy.

A response rate of 19% was noted for the 4 trials using human leukocyte interferon. These results are comparable to the 17% response rate achieved with partially purified lymphoblastoid interferon. Recombinant interferon has a slightly lower rate of 14%; these differences, however, are not statistically significant. Further studies with both beta and gamma interferons are needed to assess their relative efficacy compared to the alpha interferons.

There is little doubt interferon therapy can induce response in a small but important group of patients with metastatic renal cell carcinoma, with the most impressive results in patients with pulmonary metastasis and good performance status.

The Department of Urology is currently conducting research into the role of adoptive immunotherapy using "tumor infiltrating lymphocytes" (activated T-cells obtained from tumor tissue, regional lymph tissue and peripheral blood samples of patients with renal cancer) in the treatment of renal cell cancer in laboratory animals.

Chemotherapy of Testicular Carcinoma

The evolution of therapy of testicular germ-cell tumors is one of the truly important success stories in the treatment of GU cancers. Whereas in the 1950s cures were only obtainable with surgical resection of early localized disease, now 90 to 100% of all patients with advanced disease regularly achieve some measure of response to therapy.

The results obtained with the use of single chemotherapeutic agents were generated in early trials conducted prior to 1970, and response criteria were often not clearly specified. Objective responses were often produced, although complete responses were few. Of these few complete responses, however, long-term survivals emerged often enough to encourage

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continuing trials with other single agents in combinations made up of active drugs.

The goal of designing effective combination chemotherapy programs is to improve both the frequency and durability of complete remissions, the ultimate end point being cure. This theoretically is accomplished by combining single agents having the highest known activity, differing mechanisms of action, and preferably, different toxic effects that would result in a more intense antitumor effect without enhancing the toxicity to any single organ system. In few other settings has this approach paid more dividends than in the treatment of testicular carcinoma. The first major advance was made in this direction with a combination of bleomycin and vinblastine by Samuels and colleagues.¹⁷ By combining bleomycin, the toxicity of which is primarily skin and pulmonary, and vinblastine, which is primarily myelotoxic, marked improvements in response rates were seen.

However, the most dramatic advance in the treatment of testicular carcinoma was made when the impressive single-agent activity of cis-platinum in pretreated patients became evident.¹⁸ Because it lacks relative myelotoxicity and has no known pulmonary effects, cis-platinum was the logical drug to incorporate into the vinblastine-bleomycin combination. Side effects of cis-platinum include nausea and vomiting, ototoxicity and nephrotoxicity. However, the drug can be used fairly safely if careful attention to detail is paid by experienced therapists. The extensive use of cis-platinum in combination with vinblastine and bleomycin (VBP) was first reported by Einhorn and Donohue.¹⁹

Several cooperative groups have confirmed the Einhorn regimen produces a 70% complete remission rate with an additional 10% of patients rendered disease-free after surgical resection of residual masses. Although these results illustrate the obvious gains in the treatment of testicular carcinoma, many areas remain open for future investigation. The identification of more active single agents that could then be incorporated into more successful combination therapy is needed. This is especially important for patients with bulky, far-advanced disease where durable, complete remissions are illusive for up to 50% of patients. Currently, most centers use the combination of cis-platinum, bleomycin and VP-16 instead

of the previously used regimen with vinblastine since studies by Einhorn et al show a higher response rate and fewer side effects with this combination.²⁰

Other aspects of primary therapy, such as the roles of debulking surgery and adjuvant surgery in treating incomplete responders, deserve well-planned investigations. To date, the addition of maintenance therapy to sufficiently vigorous induction programs has not been of proven advantage. Effective salvage therapy is clearly needed for the 50% of patients with bulky disease who do not respond to initial treatment. Furthermore, it is important to define the role, if any, of earlier adjuvant chemotherapy and to identify subgroups of patients who may be at particularly high risk of developing advanced, refractory disease.

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U. of I. College of Medicine

FULL 7-YEAR REACCREDITATION FOR COLLEGE: An external survey of the finances, faculty and facilities of the College has brought rave reviews and a recommendation for reaccreditation. Representing the American Medical Association and the Association of American Medical Colleges, the 4-member survey team recommended full accreditation for 7 years without interim reports — “an unusual expression of confidence,” Dean John W. Eckstein said.

THE USE OF CARBONLESS COPY PAPER may lead to potentially life-threatening adverse reactions in some susceptible people, reports a study by **Thomas Casale, Internal Medicine**, and **James Merchant, Preventive Medicine and Environmental Health**. They studied 2 women who suffered recurrent episodes of hoarseness, cough, flushing, rashes and itching after handling the paper. Use of the paper can lead to potentially fatal swelling of the larynx with asphyxiation in some people. Some of the symptoms surfaced when one of the paper's chemical ingredients — alkylphenol novolac resin — was applied to the women's arms. The researchers conclude that physicians should carefully evaluate any symptoms associated with handling the paper.

ASSOCIATE DEAN CAROL ASCHENBRENER was named senior associate dean for the College July 1, announced Dean John W. Eckstein. In Aschenbrener's new capacity she will be concerned with such areas as faculty appointments and promotions, educational and research programs, budget making, fiscal affairs and other activities that strengthen the educational, research and professional service functions of the College, as designated by the Dean.

THE UI HEALTH SCIENCES LIBRARY has been renamed the **Hardin Library for Health Sciences** in honor of **Robert C. Hardin**, former dean of the College of Medicine who died January 2, 1988. “During his tenure as dean, Hardin stimulated the construction of the Bowen Science Building, spear-

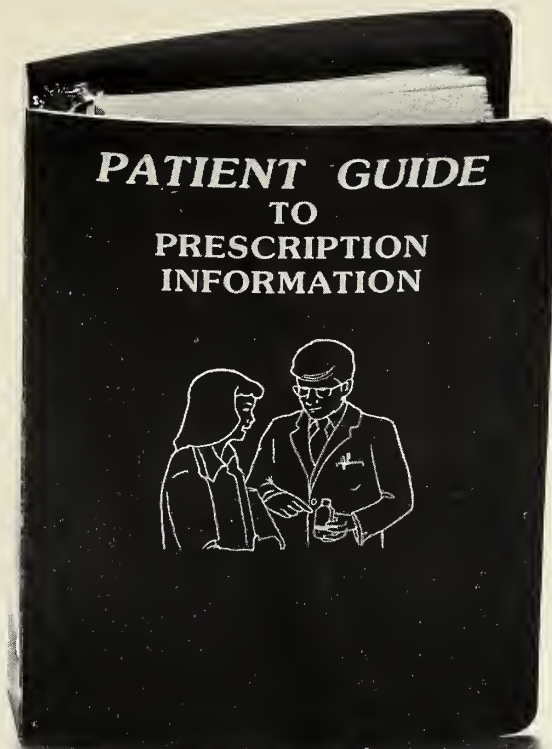
headed a national fund-raising drive to obtain matching funds for construction of the Health Sciences Library and is credited with the beginning reorganization of our basic science departments,” noted Dean John W. Eckstein.

FOUR COLLEGE OF MEDICINE PROFESSORS have written chapters for the new 18th edition of the highly acclaimed Cecil Textbook of Medicine. Contributing articles were **Francois M. Abboud, Internal Medicine** department head; **Antonio R. Damasio, Neurology** department head; **Richard Wenzel, Internal Medicine**; and **Richard Williams, Urology** department head.

THE UI IS MOUNTING A MAJOR EFFORT to prevent job-related injuries and illnesses through a comprehensive new occupational health program. Called “**Worksafe Iowa**,” the interdisciplinary UI program provides occupational health services and continuing occupational health education to business, industry, agriculture and health professionals in Iowa and in the region. **James Merchant, Preventive Medicine and Environmental Health**, is director of Worksafe Iowa. He says many, if not most, of the conditions that lead to job-related illness or injury are entirely preventable through improved workplace design, education and early detection.

NEUROLOGY RESEARCHERS AT THE UI have discovered that patients who have prosopagnosia, while unable to recognize familiar faces, are still able to identify the person's facial expression, gender and age. The new findings show how the brain uses different regions to perform different processes. While prosopagnosia patients are unable to identify familiar faces because of specific brain damage, they are not otherwise demented or impaired, noted the study's researchers, **Daniel Tranel, Antonio Damasio** and **Hanna Damasio**, all of **Neurology**. Therapists can help patients cope by teaching them to read “cues” such as sound of voices and bodily movements as ways to help them identify people.

This report has been compiled by The University of Iowa Health News Service.



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About Iowa Physicians

Dr. R. Michael Norris has joined the medical staff of Myrtue Memorial Hospital in Harlan. Dr. Norris received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and completed his general surgery residency with Borgess/Bronson Hospitals, Kalamazoo, Michigan. **Dr. Scott Thiel** has joined the Boone Family Practice Clinic. Dr. Thiel received the M.D. degree from the U. of I. College of Medicine and completed a family practice residency at the U. of I. Hospitals and Clinics. **Dr. James Levett** has joined Surgical Specialists, P.C. in Cedar Rapids. Dr. Levett received the M.D. degree from the U. of I. College of Medicine and served his residency at the University of Chicago Hospitals and Clinics. Prior to joining Surgical Specialists, Dr. Levett practiced at the Deborah Heart and Lung Center in Browns Mills, New Jersey. **Dr. Donald Borgen**, longtime Gowrie physician, has retired after practicing medicine for 56 years. Dr. Borgen received the M.D. degree from the U. of I. College of Medicine. **Dr. Janet Gilbert** has begun family practice at the Williamsburg Family Practice Clinic. Dr. Gilbert received the M.D. degree at the University of Arkansas College of Medicine, Little Rock, Arkansas and completed her residency at the University of Arkansas for Medical Sciences. **Dr. Alton Knosp**, Jefferson, has retired from family practice after 33 years. Dr. Knosp received the M.D. degree from the University of Nebraska College of Medicine in Omaha, Nebraska. Before he established his practice at the Jefferson Clinic, Dr. Knosp practiced medicine in Paton.

Dr. Charles Filipi has joined **Dr. Robert Mandsager** and **Dr. Thomas Foley** in their Marshalltown practice. Dr. Filipi received the M.D. degree from the U. of I. College of Medicine, completed a general surgical residency at George Washington University Hospital in Washington, D.C. and was a major with the U.S. Air Force, Department of Surgery at Langley Air Force Base in Hampton, Virginia.

Prior to joining the Marshalltown practice, Dr. Filipi most recently practiced at the Walla Walla Clinic in Walla Walla, Washington. **Dr. David Crippin** and **Dr. Scott Wulfekuhler** have joined the staff at Buena Vista Clinic. Dr. Crippin received the M.D. degree from the University of Minnesota Medical School in Minneapolis, Minnesota and has been practicing medicine in Sioux City. Dr. Wulfekuhler received the M.D. degree from the U. of I. College of Medicine and has been practicing in Cedar Rapids. **Dr. Jeff Allyn** has joined **Drs. Don Weideman, S. L. Anthony** and **Rodney Erickson** at the Vinton Family Medical Associates, P.C. Dr. Allyn received the M.D. degree at Tulane University School of Medicine, New Orleans, Louisiana and completed his family practice residency at Broadlawns Medical Center, Des Moines. **Dr. Richard J. Howard** has joined Surgical Consultants P.C. in Sioux City. Dr. Howard received the M.D. degree from the Medical College of Wisconsin, Milwaukee, Wisconsin and completed his residency at the University of Texas Medical Branch, Galveston, Texas. **Dr. Charles Buckley** has begun practicing medicine at the Keokuk County Medical Clinic. Dr. Buckley previously served in the Ottumwa Hospital emergency room and Keokuk and Fort Madison Hospitals.

Dr. Robert Joranson, longtime Council Bluffs physician, has retired after nearly 40 years of medical practice. Dr. Joranson received the M.D. degree from the University of Chicago, Chicago, Illinois and served his residency in internal medicine at Presbyterian-St. Luke's Hospital, also in Chicago. **Dr. Martin G. Meindl**, Creston, was awarded the Pediatric Recognition Award at the Annual Spring Pediatric Conference at Raymond Blank Memorial Hospital for Children in Des Moines. Dr. Meindl, staff pediatrician at Greater Community Hospital, was recognized for his efforts in the advancement of medical care for children in Iowa. **Dr. Jeffrey M. Kowitz** and **Dr.**

R. Mark Duff have joined the Park Clinic in Tintonka. Dr. Kowitz received the M.D. degree from the University of Minnesota Medical School, Minneapolis and completed his internal medicine residency at the University of Wisconsin, Clinical Science Center, Madison, Wisconsin. Dr. Duff received the M.D. degree at the University of Nebraska College of Medicine, Omaha, Nebraska and completed a pediatric residency at the Oklahoma University Health Science Center in Oklahoma City, Oklahoma. **Dr. Edward G. Nassif** has been elected president of the American Lung Association of Iowa for 1988-90. Dr. Nassif is a pediatrician at McFarland Clinic in Ames. **Dr. Federico Fiallos** has begun medical practice with Decatur Medical Services with offices at Leon and Lamoni. Dr. Fiallos received the M.D. degree in Spain where he also completed a surgical residency. He served as the Health Officer at the Cedars of Lebanon Health Care Center in New York then completed a surgical residency program at the New Rochelle Medical Center, also in New York. **Dr. John W. Stoughton** has joined **Dr. William Garred** and **Dr. Curtis Mock** at the W. P. Garred Medical Clinic in Onawa. Dr. Stoughton received the M.D. degree from the University of Nevada School of Medicine Science, Reno, Nevada and completed his family practice residency in Greeley, Colorado.

Dr. David W. Beck has joined the staff of St. Joseph Mercy Hospital in Mason City and has opened a neurosurgery practice on the Mercy Campus. He previously had been an associate professor of neurosurgery at the U. of I. College of Medicine. **Dr. James D. Kimball**, Des Moines, has been appointed director of family practice residency training at Broadlawns Medical Center. Dr. Kimball has served as associate director of the family practice residency program and has been a family practice faculty physician at Broadlawns since 1984. **Dr. James Hood** was elected to fellowship in the American College of Nutrition. Dr. Hood currently is a fellow of the American Physicians and a fellow of the Royal College of Physicians of Edinburgh. He practices with Medical Associates in Cedar Rapids. **Dr. James Tomic** has joined the medical staff at Marshalltown Medical & Surgical Center. Dr. Tomic received the M.D. degree from the University of Wisconsin Medical School, Madison, Wisconsin and com-

pleted a radiology residency at Wayne State University in Detroit, Michigan. **Dr. Robert H. Heise** has retired from medical practice after serving Story City for 38 years. Dr. Heise was honored at a dinner held at Valhalla. He received the M.D. degree from the University of Nebraska College of Medicine in Omaha, Nebraska. **Dr. Reginald R. Cooper** and **Dr. Joseph A. Buckwalter** have been elected to the board of directors of the American Academy of Orthopedic Surgeons. Dr. Cooper is professor and head of orthopedic surgery at the U. of I. College of Medicine and past president of the academy. Dr. Buckwalter is chief of orthopedics at Veterans Administration Medical Center and a professor of orthopedics and director of orthopedic oncology at the U. of I. College of Medicine. He is chairman of the academy's committee on evaluation.

Deaths

Dr. Lawrence DenBesten, 61, Oceanside, California, formerly of Iowa City, died June 30 at his home. Dr. DenBesten received the M.D. degree from the U. of I. College of Medicine and also completed a surgical residency there. He joined the surgery department at the U. of I. and was vice chairman and chief of the Veterans Administration Medical Center. He was UCLA chief of surgery at the Veterans Administration hospital in Sepulveda, California, and chief of gastrointestinal surgery at UCLA. Dr. DenBesten was the recipient of the AMA Physicians Recognition Award in 1973, 1975, 1978 and 1981.

ANOTHER IMS MEMBER SERVICE

Physicians who are members of the Iowa Medical Society may advertise in the classified section for 3 months without charge.

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CLASSIFIED ADVERTISING RATE — \$3 per line, \$30 minimum per insertion. NO CHARGE TO MEMBERS OF IOWA MEDICAL SOCIETY. Copy deadline — 1st of the month preceding publication.

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TIRED OF THE DES MOINES RAT RACE? — A growing multispecialty clinic in Prairie du Chien, Wisconsin is looking for aggressive family practice and general internists. We have an excellent 49-bed Community Hospital. We have excellent sports and living conditions. The school system is also well rated. Please contact Brenda Jones, Office Manager, Prairie Medicine, Ltd., Prairie du Chien, Wisconsin 53821 or 608/326-6402.

EMERGENCY PHYSICIANS — Full and part-time positions. Level II emergency room with 13,000 annual volume. Previous experience or commensurate training preferred. ACLS, ATLS required. Independent contractor status. Malpractice paid. Contact Emergency Services and Management, C.A. Lindquist, M.D., Rt. #1, Fort Dodge, Iowa 50501. Telephone 515/955-6136.

INTERNIST NEEDED — Minnesota internist seeks BE/BC internist to join his practice in Brainerd, a central Minnesota resort community. Beautiful lakes and expanding retirement area. New 162-bed hospital with all specialties. Offices in 5-year-old medical office building. Write No. 1580, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265.

PEDIATRICIAN — Wanted to join 2 Board Certified pediatricians in Southeast Iowa community of 28,000. Rapidly growing practice with Level II nursery. Regional referral center for 10 counties. Most other specialties represented. For further information call 515/682-0318 or send a curriculum vitae to Pediatric Associates of Ottumwa, P.C., 1140 North Jefferson, Suite 207, Ottumwa, Iowa 52501.

MANKATO CLINIC, LTD — is seeking BE/BC physician in the following specialties: allergy, dermatology, invasive cardiology, oncology, urology, ophthalmology and general internal medicine. The Mankato Clinic is a 38-doctor multi-specialty group practice in south central Minnesota with a trade area population of 150,000. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Roger Greenwald, Administrator or Dr. B.C. McGregor at 507/625-1811 or write 501 Holly Lane, Mankato, Minnesota 56001.

MEDICAL OFFICERS — Location: Des Moines Military Entrance Processing Station. Medical officer (general practice) needed to serve as the chief medical officer with responsibility for planning and directing the medical examining section of the station. Makes final determination of medical acceptability of examinees for the Armed Forces. Salary: \$36,889 per annum. (May be increased based on physician's comparability allowance and/or superior qualifications.) Full civil service benefits. Call Rita Verkler, Directorate of Civilian Personnel, Fort McCoy, Wisconsin 54656-5000, 608/388-3755 or 608/388-3772 for more information. An Equal Opportunity Employer.

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FAMILY PHYSICIAN NEEDED — Board Certified or Eligible family physician to join established group of 6 ABFP physicians in rapidly expanding practice. Office located adjacent to county hospital. Board surgeon, radiologist and pathologist resident in town of 8,000 with liberal arts college, one hour from metro areas. Excellent facilities including x-ray and laboratory. Competitive first year salary. Please send current curriculum vitae to Kevin L. Sand, M.D., Decorah Medical Associates, P.C., 805 Montgomery Street, Decorah, Iowa 52101.

POSITION WANTED — Full-time, part-time or locum tenens employment by 62-year-old male physician general practitioner. Good health, active and up to date with good references. Iowa, Minnesota and Wisconsin CME licenses current. General practice background would like work involving older patients although surgical, medical and general background is good. Reply to Box 1581, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265 or call 515/444-4424.

ORTHOPEDIC SURGEON — Part-time position in county hospital with Family Practice Residency Program, University of Iowa affiliation. Competitive salary and benefits. Send CV to BMC, 18th and Hickman Road, Des Moines, Iowa 50314 or call 515/282-2275.

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Defining Quality

PERHAPS THE MAIN ISSUE can be summed up by paraphrasing an old adage. When it comes to medical care, quality is in the eye of the beholder. This month, IMS physicians share their definitions of quality care.

GARY PEASLEY, M.D., Marshalltown, a urologist for 10 years: "Quality medical care comes from well-trained physicians who are truly interested in the patient's welfare. I don't see problems with quality in medical communities to which I am exposed. Even if a patient has a complication or the cost rises, that doesn't mean they haven't received quality medical care. If it's cost everyone is worried about, we need to look closer at such things as the cost of having certain technologies available at more than one hospital."

JOHN SUNDERBRUCH, M.D., Davenport, 52 years of general practice with surgery: "Once, quality of care was measured by the physician and accepted by the patient. Now, quality medical care cannot be defined because it is measured by the doctor, the patient and third party payors. Attempts to legislate quality are fruitless and dangerous. The only definition applicable today is quality care is what is acceptable to individuals delivering, accepting or paying for the care. If these parties agree, it is utopia."

RIZWAN SHAH, M.D., Des Moines pediatrician: "The essential components are prevention strategies and education of the public about unhealthy lifestyle choices, developing and implementing standards of care through quality assurance and peer review and bringing the cost of care within the reach of the public, especially the elderly and children. Without all these components, we cannot provide quality care."

SAMUEL PORTER, M.D., Mason City, retired surgeon: "Perception of quality medical care comes from the patient, the family,

the purchaser, the provider, the insurer, the regulating agency and the community. The dimensions of that perception include availability, accessibility, effectiveness, continuity and compassion. All these elements must be considered."

PAUL ROHLF, M.D., Davenport, a urologist for 19 years: "In peer review, I consider these questions . . . Was a problem clearly identified? Was there a logical treatment plan? Was there reasonable expectation that potential benefits of treatment outweighed risks of treatment or no treatment? Was the patient adequately informed? Was the care timely, reasonable and in an appropriate setting? Was there concern for the patient's welfare? Would the care have been acceptable to me if the patient had been me or a member of my family? The final question is the most important."

WILLIAM MCMILLAN, M.D., Ottumwa, otolaryngologist for 10 years: "Quality medical care is the degree of worth of what a physician does for a patient. The diagnosis and treatment must be well-thought out, technically correct and conscientiously applied. Aggressiveness of remedy must be determined by a well-informed patient. It should be curative when possible and comforting when not. The measure of quality comes with understanding and fairly applying one's medical ability."

LOUIS BANITT, M.D., Ames, internal medicine: "The hallmark of quality in medical care is excellence in cognitive and technical skills associated with high value and cost effectiveness provided in a setting of care and compassion."

October 1988

Iowa Medicine

Daniel M. Youngblade, M.D.

President's Privilege



What's In It For You?

PEOPLE IN THE MARKETING FIELD understand any effective advertising campaign must answer one basic question for consumers — What's in it for Me? I'm sure this theory also applies to Iowa physicians and organized medicine.

Why do Iowa physicians need organized medicine? What's in it for them? If you will take a look at the special inserts in this month's *IOWA MEDICINE*, you'll have an answer to those questions.

Health care delivery is changing more rapidly than any of us envisioned when we began practice. We are seeing unbelievable high tech activity, old diseases with new-found causes and altered treatment and new diseases with unknown treatment and questionable final outcome. We must cope with increasing intrusion of third party payors, government agencies and regulatory bodies. We have seen the physician/patient relationship undergo a radical transformation.

We need the IMS to help us respond to changes in our practice environment and to speak on our behalf. In this era of upheaval, it is vital we speak with one strong voice. Some returns on our dues investment are indirect and difficult to measure, but in many instances the benefits are visible. I firmly believe without the Society's Medicare Partners program, we would have mandatory Medi-

care assignment in Iowa. This alone justifies my dues investment. Please read the enclosed inserts to learn more about what the IMS is doing for you.

The nature of physicians seems to dictate our "aggressive personal response" to any questioning of our style of medical practice. Whether it be a patient confrontation, a medical staff inquiry, a PRO review or legal action, we all take exception to the suggestion of mismanagement or wrongdoing.

Today, parties outside the medical profession are finding all sorts of ways to review physician competence. This review is being done from time of licensure on through our careers. Though there are legal means such as hospital "fair hearings" for physicians to counter adverse judgments, we face strict regulatory activities by state and federal government, PROs and third party payors.

See inside for a feature article on the changing face of doctor discipline.

Daniel M. Youngblade, M.D.
President

Twenty Years of Doctor Discipline: Iowa Style, Mayo Style and Minneapolis Style

MICHAEL MYERS
Minneapolis, Minnesota

The author traces the evolution of doctor discipline from a professionally-governed code of ethics to a politically-inspired codification of cost-cutting efforts.

AS A HEALTH LAWYER, HOSPITAL CEO and hospital trustee over the past 20 years, I have come to conclude Scott Peck was correct when, in the first sentence of his book *The Road Less Traveled*, he asserted "Life is difficult . . ." and "discipline" is the essential ingredient for dealing with it. T. H. Huxley was also right when he observed "Nature never overlooks a mistake or makes the smallest allowance for ignorance."

I have also observed that:

- Life for physicians in 1988 appears to be more "difficult," or less satisfying than in, say 1969.
- There exists ample opportunity for physician "discipline" through the multitude of statutory, accreditation and institutional policies, rules and regulations.

Mr. Myers is president and CEO of the Riverside Medical Center in Minneapolis.

- There exists evidence of widespread ignorance regarding the causal relationship between the integrity of the medical profession and the quality of patient care.

I have further concluded the approach to doctor discipline changes markedly in terms of time and space. These changes have shifted the monitoring of medical practice from a professionally-governed code of ethics to a politically-inspired codification of efforts to stem the cost of health care.

The following abbreviated accounts of true situations illustrate the evolution in doctor discipline to which I refer . . .

Sioux City, 1969. Client: St. Joseph Mercy Hospital of Dubuque, with hospitals in Sioux City, Waverly, Cresco, Mason City, Dubuque and Clinton. Preliminary copy of Joint Commission "model" medical staff bylaws, rules and regulations obtained. Sioux City bylaws require updating for scheduled JCAH accreditation survey. An offending provision stands out: "As a condition to obtaining Medical Staff membership, the applicant must first be a member of the Woodbury County Medical Society." Federal Court had rendered such a requirement void. Medical staff membership and privileges shall be granted by boards of trustees, not medical societies, and "aggrieved physicians" shall be afforded elaborate due process. The model bylaws, rules and regulations are substantially edited to reflect hospital and physician indignation toward the Commission's intrusion into private medicine.

Doctor discipline. On paper. Not in spirit. The profession is intact.

Lawyers Enter Hospital Board Room, 1977. Somewhere in upper midwest. Orthopaedists in department of surgery express concern regarding "pattern" of cervical and lumbar spine surgery being performed by neurosurgeon. Privileges restricted. Appeal to Board of Trustees. Lawyers engaged. Formal hearing in hospital board room, court reporters, transcripts, et al.

Doctor discipline. On paper, with signs of implementation. The profession is concerned, but intact.

St. Mary's Hospital, Rochester, Minnesota, 1981. Closed medical staff. Mayo Clinic physicians only. Joint Commission visit

'There exists ample opportunity for physician discipline through the multitude of statutory, accreditation and institutional policies, rules and regulations.'

scheduled. Some language in medical staff bylaws appears missing. Role of board less clear. Role of Mayo appears to be at odds with manual. Joint Commission bends. Peer review among Mayo's "800 vice presidents" doesn't follow the book, but judged stronger than community-hospital open-staff style. Mayo Medical Center is "physician-driven."

Doctor Discipline. Soft on paper. Hard in practice. In Rochester, the profession is intact.

Riverside Medical Center, Minneapolis, 1987. St. Mary's and Fairview form joint-ventured Riverside Medical Center. "HMO-Land." Managed care and discounts. Physician incomes down. Hospitals merging for survival. Physicians caught in "sued-if-you-don't-discounted-if-you-do" squeeze. Fail to order the test and the plaintiff's lawyer is waiting. Order the test and the utilization review committee raises concern regarding a "troubled physician" pattern. Any hospital "action" regarding staff membership or privileges must be reported to the Hennepin County Medical Society and the State Board of Medical Examiners; Minnesota Legislature enacts broad doctor "squeal law." Physician practice profiles developed by payors.

Doctor discipline. On paper after paper. Spirit bent, but not broken. The profession is intact, but shredded.

Thus, as we trace doctor discipline from a dining room at the Sioux City Country Club to the board room of an Iowa hospital, through the insularity of the Mayo Clinic and finally to the doorstep of the Minnesota legislature, it becomes clear that thoughtful health policy-makers should reflect upon the condition of the medical profession in 1988 and its role with respect to doctor discipline. Although there may exist a level of indifference about whether the medical professional is better off today than a decade ago, there should be concern about whether the patient is better off today than a decade ago.

In pondering this question, policy-makers should recognize there exists a vested economic interest among government, the legal profession, third-party payors and peer review boards to make certain doctor discipline does not return to the era of a professionally-governed code of ethics. Too many jobs would be lost.

BME Emphasizes Concern for Public's Welfare

The author, executive director of the Iowa State Board of Medical Examiners, discusses the Board's purpose and how it goes about accomplishing that purpose.

THE IOWA BOARD OF MEDICAL EXAMINERS is the state agency which regulates physicians through the licensure and disciplinary processes. In recent years increasing concern has been expressed by the public, press, legislature and the medical community itself for state boards to more fully investigate and appropriately respond to problem physicians. The problems that bring physicians within the jurisdiction of the Board are varied. They include but are not limited to, al-

(Please turn to page 522)

cohol and drug abuse, dishonesty, abuse of patients, drug diversion, fraud and incompetency.

Complaints against physicians are received from a number of sources including patients, physicians, nurses, hospitals, other state boards and the Iowa Commissioner of Insurance. Some complaints are made pursuant to a mandatory reporting duty. Iowa physicians must report colleagues when they

'The Iowa Board has increased its scrutiny of applicants for licensure, although the Board is mindful and sensitive of the need to allow qualified physicians the opportunity to serve Iowans without unnecessary red tape.'

have knowledge of violation of the Practice Act by another physician. Hospitals must report limitations on hospital privileges imposed on a physician by its board of trustees. Insurance companies must report to the Insurance Commissioner claims asserting medical malpractice; the Commissioner, by administrative rule, must forward to the Iowa Board of Medical Examiners this information for investigation. Cases involving allegations of incompetency may be referred to one or more of the 4 Peer Review Committees registered with the Board for their expertise and assistance prior to further Board consideration.

After a case is investigated and reviewed, it is eventually presented to the full Board. The full Board consists of 5 M.D. members, 2 D.O. members and 2 lay members. The Board officially meets approximately every 6 weeks. If the Board feels a case does not justify a formal charge, the entire matter will remain confidential and will be closed, or closed with a confidential letter of warning, when appropriate.

If there is sufficient evidence to justify a formal response, the Board votes to approve a Complaint and Statement of Charges which is a public record and therefore available and accessible to the press. A hearing date is set and the matter proceeds to hear-

ing unless a settlement of the case is accomplished. A hearing can result in no action when the evidence is insufficient or, if the facts proven justify a fine, probation, suspension or revocation. The disposition of each case is tailored to its specific facts and the overriding concern for the public's protection.

To reduce the frequency and necessity of licensee discipline, the Board has recently emphasized the importance of licensure. The Iowa Board has increased its scrutiny of applicants for licensure, although the Board is mindful and sensitive of the need to allow qualified physicians the opportunity to serve Iowans without unnecessary red tape.

Background information on applicants is gathered, including but not limited to, education, formal training and experience, health, hospital privilege history, prior disciplinary actions and medical malpractice suits. The Board may request an interview with the applicant prior to its decision on licensure.

All the Board's efforts, both in its licensure and discipline functions, are designed to better protect the public it serves while demonstrating, whenever possible, compassion for the physician who needs help, rehabilitation or training. The Board believes quality of care can be assured and determined by licensure. Having a license to practice medicine in Iowa should signify the individual is a qualified and competent physician. The Iowa Board of Medical Examiners will continue its efforts to achieve that goal. — William S. Vanderpool, J.D., Des Moines, Iowa.

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Questions & Answers

Discipline Begins at Home

The author, a Mason City surgeon and chairman of the IMS Grievance Committee, discusses the purpose of the committee and its role in physician discipline.

Do the activities of the Grievance Committee have significance in the area of doctors and discipline?

The committee can play a role in this area because effective peer review is an important tool in helping physicians practice better medicine. Of course, there are some situations over which the committee has little control — such as physicians who practice poorly from a scientific standpoint or patients who expect an ideal situation every time.

However, it has been shown that patient complaints most often stem from a lack of effective communication with their physicians. The major role of the committee is to initiate and improve patient/physician communication. Most patients understand they are not always going to experience a perfect outcome. However, they do expect to be treated by caring, open physicians.

Please outline the history and purpose of the IMS Grievance Committee.

IMS Bylaws state "The Grievance Committee shall investigate and supervise the ethical deportment of members of the Society. It shall make periodic recommendations for improvement of professional conduct, and shall prefer and prosecute charges before the appropriate judicial bodies against any physician deemed by the Committee to be guilty of unprofessional conduct."

The committee consists of one physician member from each councilor district of the IMS. Committee members serve 2-year terms.

What types of complaints does the committee address?

Patient complaints received by the committee are varied. However, when they are investigated, most turn out to be a product of poor physician/patient communication.

Sometimes a complaint results from the patient's inability to understand what is happening despite the physician's best efforts. At other times, the fault lies with the physician who has not taken the time to talk to the patient and establish good rapport.

The committee sometimes receives complaints about fees charged by physicians. The committee will investigate these complaints if there appears to be a communication problem between the patient and physician over a fee.

The committee also receives quality-of-care complaints. The committee will investigate

(Please turn to page 526)

complaints of this type when there is no threat of a lawsuit and when the problem appears to stem from lack of communication rather than a poor result.

Once a complaint is filed with the committee, what happens?

Patients who wish to complain about the professional conduct of an IMS member physician may do so by submitting the particulars in writing through IMS headquarters. Grievances are accepted if the physician in question practices in a county whose medical society does not have a grievance committee or if the county society has been unable to resolve the problem.

Anyone bringing a complaint before the IMS Grievance Committee is contacted by the committee secretary in writing. The patient is asked to sign a statement indicating legal action is neither underway nor contemplated. The person is also asked to sign a waiver allowing the committee to obtain medical care information from the physician involved.

The secretary then writes to the physician involved. The physician is sent a copy of the patient's complaint and asked to reply in writing to the committee. Copies of any pertinent medical records must be attached. The secretary collects all written data and holds it until the committee meets.

Each complaint is fully discussed by committee members and a consensus is reached on the merits or nonmerits. Formal replies are sent to the patient and the physician. In unusual circumstances, both parties may be asked to appear before the committee.

LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

Letters to the Editor

President's Message Praised

Dear Editor:

Dr. Youngblade's message in the August, 1988 *IOWA MEDICINE* regarding dying patients was very timely, well expressed and thought provoking.

As an octogenarian in a retirement area, I often watch the despair of physicians wrestling with this problem. Frustrated M.D.s should be comforted by your message that they are not alone being sorely troubled to make a correct decision. — *Lewis J. Dimsdale, M.D., FACP, Ft. Lauderdale, Florida.*

TENS Study

Dear Sirs:

Recently your article on *TENS for Post-Surgical Analgesia Following Gastropasty* was brought to my attention. In it the authors describe a post-operative trial of TENS for gastropasty and conclude that TENS is not effective for this purpose.

Several things about this report are disturbing. Of primary clinical discrepancy is the setting protocol cited in the article. In brief, manually set single parameter TENS units are seldom used by knowledgeable clinicians in the modern hospital setting. By selecting a pre-set, non-modulated protocol the patients in the study were assured of accommodation to this stimulation, resulting very quickly in diminished efficacy. Enlightened TENS practitioners have known for several years that successful blocking of chronic or acute pain over the long term requires modulated parameters.

Secondly, a discrepancy in the study and "control" group is clearly shown when pointing out that their post-operative medication varied. While the non-TENS group received routine injections of Demerol 100 mg, the TENS group received Demerol 75 mg and Vistaril in combination. This fact alone is enough to refute the findings of the study.

In addition, it is stated in the report that the TENS group had more x-ray confirmed pulmonary complications than the non-TENS group. When assessing the validity of this claim it is necessary to consider the smooth muscle relaxation effects of Demerol-Vistaril combined. Since a reduction in post-operative atelectasis is highly dependent on the patients ability to cough effectively, the CNS suppressive role of Vistaril is no doubt a factor. This same mechanism may come into account when reviewing the post-operative ileus occurrences in these patients.

Finally, it is pointed out in the article that electrode spacing was not a major consideration in this study and that perhaps moving the electrodes closer together might result in deeper stimulation. This statement is completely erroneous. It is only by spacing electrode pads at greater distances that deeper afferent nerve stimulation is achieved

using TENS. In the case of gastroplasty, much of the post-operative discomfort is presumably from the deep fascia, secondary to incision and retraction. Therefore, it is critical that successful TENS treatment of this post-operative state is performed with the correct target in mind. From the sound of this study, little more than epidermal pain control could have been expected, hardly the major objective in such treatment.

Correctly used, TENS may be one of the most important post-operative discomfort intervention methods available to us today. Incorrectly used, TENS may as well be compared to topical application of drugs intended for intermuscular or intravenous administration. Quite frankly, there can be very little validity attributed to this study. — J. R. Jones, PA, Vice President/Director of Medical Research and Development, Physio Tronics Medical Products, Wichita, Kansas.

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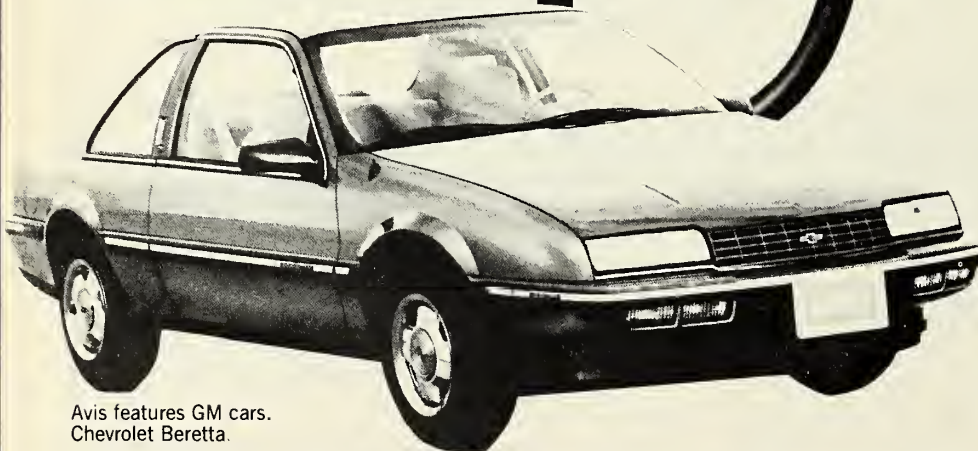
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Primary Splenic Pregnancy with Intraperitoneal Bleeding and Shock: A Case Report

JEFFREY K. LARKIN, M.D.

DOMINADOR M. GARCIA, M.D.

ERIC L. PAULSON, M.D.

Carroll, Iowa

DONALD W. POWERS, M.D.

Ames, Iowa

The authors present the case history of a rare splenic pregnancy in a 27-year-old woman.

A 27-year-old woman came to St. Anthony Regional Hospital by ambulance with severe pleuritic and anterior chest pain and hypotension. She had complained of chest pain for about 3 hours at home and was having diarrhea and vomiting. She had missed a period about 6 weeks prior to her admission and had some spotting since then. She has 2 live

born children ages 7 and 5 and one spontaneous abortion approximately a year ago.

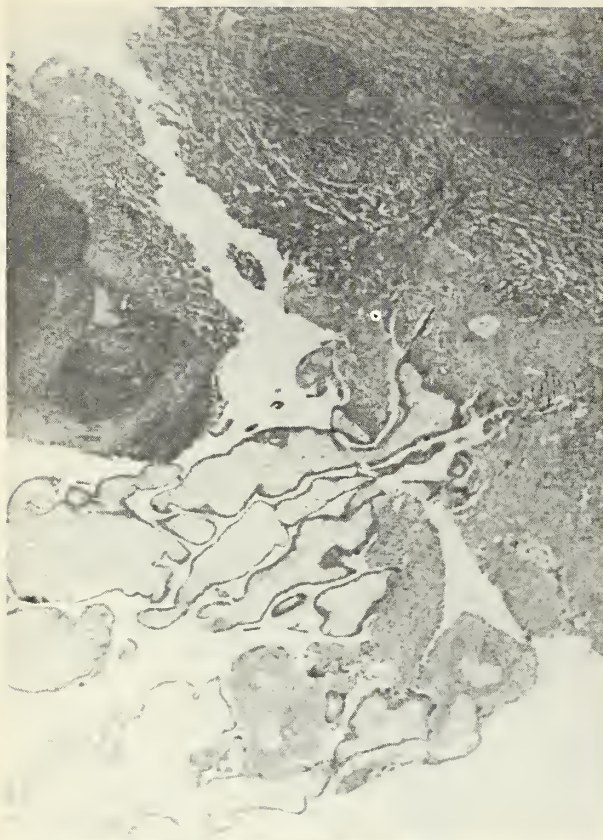
She had no palpable blood pressure and was barely conscious. Her pulse was 140. She complained of severe chest pain. She had some mild abdominal tenderness. Chest was clear to auscultation and she had no murmurs. An electrocardiogram showed a sinus tachycardia with a rate of 140 but it was otherwise normal. She underwent fluid resuscitation and her blood pressure came up to the 80-90 range, at which time she had an increasingly tender abdomen. Pelvic examination revealed marked tenderness; no definite mass was palpated. Because of the severity of her chest pain, a nuclear perfusion scan was done. It was normal and surgical consultation was obtained.

Her white blood count was 21,400 with 80 pmns, 2 bands, 16 lymphocytes, 2 monocytes. Her hemoglobin was 9.0. Arterial blood gases were pH 7.18, PCO₂ 39, PO₂ 214 and HCO₃ 14.8 with oxygen running. She had a positive serum pregnancy test.

Surgical abdominal exploration was done. There were approximately 4 pints of blood noted in the peritoneum. The pelvic organs appeared normal with the exception of a small cyst of the left ovary which was intact and was not bleeding. The uterus was normal. Further exploration revealed some bleeding coming from the left upper quadrant, later shown to

Drs. Larkin and Paulson are family practitioners in Carroll. Dr. Garcia practices general surgery in Carroll. Dr. Powers is a pathologist in Ames.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF NOVEMBER 1988



Figures 1 and 2. Microscopic exam showing proliferating chorionic villi and trophoblastic tissue.

be from a cyst on the superior pole of the spleen. Because of this a splenectomy was done. The patient had a total of 7 units of red blood cells and 2 units of fresh frozen plasma transfused prior to, during and after the procedure. The patient's postoperative course was normal. Postoperatively, an ultrasound of the uterus was normal; this appears to satisfy the criteria that this was in fact, a primary splenic pregnancy.

The pathology specimen confirmed the diagnosis of ectopic pregnancy to the spleen with capsular rupture. In the superior pole of the spleen, there was a cystic structure protruding from the underlying parenchyma measuring 2 cm in diameter. Deep to the surface there was a protrusion of the parenchyma into the cyst with a surface rupture. There was regional hemorrhage. Microscopic examination showed proliferating chorionic villi and trophoblastic tissue. The rest of the splenic parenchyma was normal.

To our knowledge, there are only 3 other cases in the English literature regarding pregnancy in the spleen.^{1, 2}

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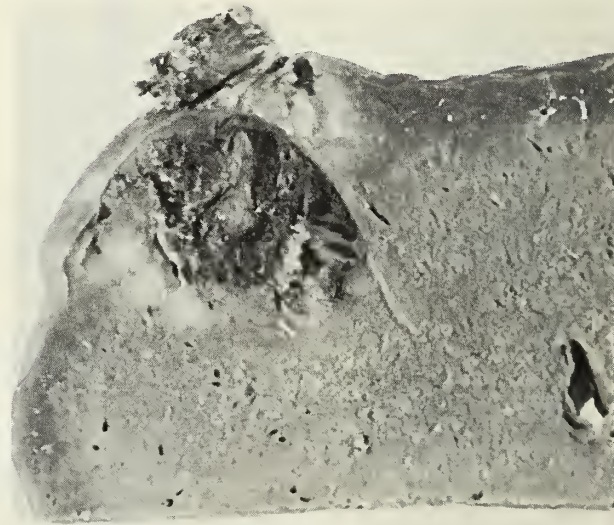


Figure 3. Gross specimen superior pole of spleen with 2 cm cystic structure representing ectopic pregnancy.

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NIH Consensus Development Statement of Perioperative Red Cell Transfusion

Transfusion of red cells is a life-saving measure in management of a variety of conditions. The AIDS epidemic has raised the level of apprehension regarding transmission of infectious disease by transfusion. Furthermore, there is new information about anemia in the perioperative period. These developments have stimulated reexamination of transfusion therapy.

The National Institutes of Health, from June 27-29, 1988, held a Consensus Development Conference on Perioperative Red Cell Transfusion. A consensus panel, drawn from the medical profession, blood banking organizations and the general public has released the following findings.

Modern surgical and anesthetic practice has been guided by the belief that a hemoglobin of less than 10 g/dL or a hematocrit of less than 30% indicates a need for perioperative red cell transfusion.

Current experience suggests most patients with hemoglobin values > 10 g/dL rarely need perioperative transfusions; those with acute anemia and hemoglobin values < 7.2 g/dL more frequently need blood.

No single criterion can replace good clinical judgment. Deciding to transfuse red cells depends on clinical assessment of laboratory data such as arterial oxygenation, mixed venous oxygen tension, cardiac output, the oxygen extraction ratio and blood volume.

Many physicians and patients are concerned anemia may increase perioperative morbidity. There is no evidence mild to moderate anemia contributes to perioperative morbidity. For example, healing is not compromised by normovolemic anemia.

Among the risks associated with homologous red cell transfusion are transmission of human hepatitis virus, human immunodeficiency virus (HIV) and human T-cell lymphotropic viruses (HTLV-I), cytomegalovirus and rarely other microbial agents such as Epstein-Bar virus, babesia, parvovirus and plasmodia. Therefore homologous transfusions should be kept to a minimum.

Although homologous red cell transfusions are becoming safer, they are not substi-

tutes for good surgical and anesthetic techniques. Progress in anesthesia has allowed more time for the surgeon to be fastidious about hemostasis; new surgical techniques have improved the ability to control bleeding.

There are alternatives to homologous transfusions. Among these are the use of autologous blood, collected perioperatively and by intraoperative blood salvage. This appears to be safe in some applications and reduces need for homologous transfusion. In addition, pharmacologic approaches to reducing the need for homologous transfusion are promising.

For example, hemostasis may be improved by the use of desmopressin and recombinant erythropoietin (r-HuEPO) and may increase the amount available for autologous transfusion.

Free, single copies of the complete NIH Consensus Statement on Perioperative Red Cell Transfusion may be obtained from the Office of Medical Applications of Research, Building 1, Room 216, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland 20892.

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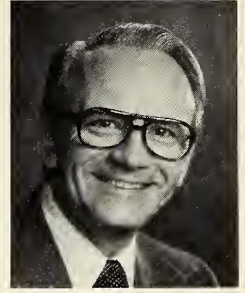
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Marion E. Alberts, M.D.

The Editor Comments



Professional Discipline

THE PRACTICE OF MEDICINE is a strict disciplinarian. From medical studies throughout the many years of service to our patients, there is a discipline unlike that of most other professions. We concern ourselves with the innermost problems that beset mankind. Our endeavors may be directed to prevention of disease and injury, but we are most sought after when the patient is in need of diagnosis and treatment of illness or physical mishap.

Consequently, in many instances our services must be rendered under unwanted circumstances, circumstances which may have personal and economic impact for the patient. Herein lies our great responsibility — to serve a need under adverse conditions; and we must be ready to do that at all times. Unless we have someone to “take call,” it is an individual responsibility we hold every hour of every day we practice medicine. There is no compromise. Not many professions hold such an awesome responsibility and we must meet that challenge.

Sir William Osler admonished physicians to “live a simple and temperate life, that you may give all your powers to your profession.” There is a lot of power in that statement. It implies that we must love our-

selves. We do that by respecting ourselves. We may have to recognize our personal shortcomings and maintain ideals of which we individually approve. By so doing we can live a constructive existence. However, some do not care to face themselves and cannot deal with harsh realities which often become hurdles to be mastered. It is then that one's knowledge, training and discipline is compromised.

Troubles come to all. They cannot be avoided. But, they can be dealt with in an intelligent manner. There is often the temptation to deal with a problem in a manner which only compounds the situation. Physicians can rise above the temptation to take drugs or alcohol in excess, the temptations of fraud in dealing with third-party payors or the temptation of antisocial behavior. In many instances the physician may be rescued from such a trap before the consequences become overly severe. The IMS Assistance Program for Troubled Physicians is a laudable effort. Above that must be maintenance of a professional discipline which is purely a controlled behavior resulting from training and adherence to rules of behavior directed to moral and mental improvement. The loss of the license to practice medicine is a great price to pay for indiscretion. — M.E.A.

Richard M. Caplan, M.D.

CME Notebook



Why An Ethicist Now?

CONVERSING RECENTLY WITH A senior faculty member, I described the almost-completed effort to hire our first biomedical ethicist for the College of Medicine. My colleague asked, "Why an ethicist now?" His question can be interpreted variously, depending on which words receive the emphasis.

"Why" — Because we need someone to teach students, house staff, faculty and practitioners the vocabulary, content and approach of a new area of applied ethics that has appeared in the past 15 years. The mission is not to indoctrinate with rules, right answers or descriptions of correct conduct. It is to teach an approach to analyzing problems, defining terms and issues, understanding conflicting values and developing morally defensible options and consequences from which a clinician must choose an action. The technology of modern medicine, from in-vitro fertilization to prolonging life through artificial or transplanted organs, and a myriad other problematic practices has brought to the clinic, the bedside, the legislatures and the courts complex new questions of personal values and social policies. Further, the ethicist would consult (not decree) when asked about real conundrums. Like other faculty members, the ethicist would have an obligation to contribute to

knowledge through research and publication.

"An" — Because there was money enough to hire only one. The need warrants more and we hope that may soon be possible. A number of medical schools already have 3-5 biomedical ethicists.

"Ethicist" — An ethicist rather than, for example, a pharmacologist or a cardiologist, because in the other disciplines our supply more closely matches our need. Ethics has become so important a component in clinical medicine and biomedical research and education that to omit it is not compatible with an educational institution that aspires to high quality.

"Now" — Because we must not wait longer. Living in a society which is rapidly accumulating new knowledge, we must face the panoply of personal and social challenges and prepare ourselves to make difficult choices.

This new discipline will make its way into the CME arena. It has already entered popular media and the better medical journals. At least, many of the questions have. Learning how to approach the ethical dilemmas in order to work to a solution is analogous to learning how to approach a problem in any other compartment of biomedicine.

Our new biomedical ethicist is Professor Robert Weir. He is exceedingly well qualified to help us. I hope you may soon have opportunity to meet him.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

Is Your Organization Healthy?

WHILE MEDICAL PEOPLE often focus on managing the technical and service aspects of their organization, an equally important resource is overlooked: people.

How do you assess the health of your human resources? As consultants, we have found critical areas which should be assessed in making this determination; organization structure, compensation system, performance review system, management training and administrative system.

Organization Structure

Every organization has a structure, whether formal or informal. Most important, however, is whether this structure supports effective management. There are 4 key steps to establishing an effective organizational structure; define your structure, communicate structure and responsibilities to employees, assist employees in working within this chain-of-command, and develop a management succession plan.

Compensation System

The main elements in an effective compensation system are job descriptions and compensation plans. Most organizations have job descriptions. However, many job descriptions are outdated or poorly understood by employees. Often, employees do not understand how the job description relates to the compensation system.

The keys to a successful compensation plan are a clear understanding of rewards (i.e. job description), a compensation philosophy, evaluating competitive position in regard to compensation and effective administration.

Performance Review System

Often, organizations feel they have an effective review system because reviews are done annually. This is not a valid indicator of the quality of the performance review system.

Consider these questions:

- Are employees informed of performance informally and formally?
- How often are employees given feedback on their job performance?
- How effective are managers in giving the performance feedback, i.e. are they honest; can they use the system to improve performance?
- Are the review criteria objective?
- Do managers have examples to support their opinion?
- Does the review tie into the pay system?

The organization must assess form and process. The key to an effective performance review system is management training.

Management Training

Few organizations invest sufficient training time in the following management fundamentals; leadership and team building, communication, confrontation and problem-solving, handling the problem employee, giving a performance review, delegating and motivating.

In order for your organization to fully utilize its human resources, your managers must be strong people managers as well as technical experts.

Administrative System

The quality of human resource management is indicated by the thoroughness and con-

This article was authored by Bob Burfeind, a Consulting Services Manager with McGladrey, Hendrickson and Pullen, Des Moines.

trol of the organization's administrative function. These questions can be used in this assessment:

- Are employee files well organized? Do they contrain appropriate information?
- Are employment decisions — hiring, transfers, promotions, demotions and terminations — properly documented?
- Is the organization in compliance with governmental regulations?
- Are pay, benefits, performance review or employee development properly administered?

Often professionals want human resources management without the proper commitment to the personnel function. The result of this error is obvious.

Finally, ask yourself this question: Do you manage your human resources as carefully as you manage your other resources? If your answer indicates an organizational weakness, you are missing tremendous opportunity.

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BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:

1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Medical News/Products and Programs

THE UPJOHN COMPANY HAS ANNOUNCED — Cytosar-U Sterile Powder (sterile cytarbine) is now available by prescription in 1- and 2-gram vials. The new, larger vial sizes are designed to make dosing of the cancer drug more convenient. Cytosar-U Sterile Powder, a freeze-dried preparation, is also available in 100- and 500-mg dosages. The product was originally marketed in 1969. Cytosar-U Sterile Powder is indicated primarily for induction and maintenance of remission in acute myelocytic leukemia of both adults and children. It also has been found useful in the treatment of other leukemias, such as acute lymphocytic leukemia, chronic myelocytic leukemia (blast phase) and erythroleukemia. Cytosar-U may be used alone or in combination with other antineoplastic agents; the best results are often obtained with combination therapy. Only physicians experienced in cancer chemotherapy should use Cytosar-U Sterile Powder. It is a potent bone marrow suppressant, and patients receiving it must be monitored closely. Frequent platelet and leukocyte counts and bone marrow examinations are mandatory.

CONJUGATE HIB VACCINE — The U.S. Food and Drug Administration has approved the first conjugate Hib vaccine for marketing. ProHIBIT™, from Connaught Laboratories, Inc., is indicated for immunization against Hib disease in children 18 months of age and older. It replaces previous polysaccharide vaccines only effective in children as young as 2 years old. This improvement extends vaccination to nearly 50% more children at risk for Hib disease.

GLUCOSE CONTROL — A rapid new technique for monitoring glucose control in diabetic patients, yielding results in less than 30 minutes, has been developed by Roche Diagnostic Systems, Inc., a subsidiary of Hoffmann-La Roche Inc. Called RoTAG™ Fructosamine Assay, the test makes use of a chemical

reaction that detects fructosamines (glucose bound to protein) in blood serum. The turnaround time of RoTAG™ assay is less than 30 minutes, compared with 24-48 hours for the glycated hemoglobin test, HbA_{1c}, now commonly used for glucose monitoring. RoTAG™ is the "missing link" between currently available measurements of glucose control over 24 hours versus 60 to 90 days. In addition, RoTAG™ is about half the cost of the glycated hemoglobin test to the laboratory.

Fructosamine levels correlated with other measurements of glucose control such as glycated hemoglobin and fasting blood glucose, but offer several advantages: they are not subject to the daily random variations of plasma or urine glucose levels and they reflect glucose control over a shorter time period than glycated hemoglobin levels.

TREATMENT FOR SERIOUS INFECTIONS (UPJOHN) — Cleocin HCl (clindamycin hydrochloride), an antibiotic for serious, sometimes life-threatening infections, is now available by prescription in a high-dose oral form — a maroon-colored 300 mg. capsule. The new Cleocin HCl 300 mg. capsules can achieve blood levels of the antibiotic sufficient to combat serious infections more conveniently than the already available 75 mg. and 150 mg. dosages. This will help efforts to release patients from the hospital earlier to continue oral antibiotic therapy at home.

Cleocin HCl capsules are indicated in the treatment of serious infections caused by susceptible anaerobic bacteria, as well as in the treatment of serious infections due to susceptible strains of streptococci, pneumococci and staphylococci. These serious infections include pelvic inflammatory disease, osteomyelitis, diabetic foot and skin and soft-tissue infections.

Clindamycin has been associated with *Clostridium difficile* colitis, as have other antibiotics (i.e., penicillins — especially ampicillin — and cephalosporins). Use of this antibiotic should be reserved for penicillin-allergic patients or other patients for

whom penicillin is inappropriate. Physicians should consider the suitability of less toxic alternatives.

RUBELLA SLIDE TESTING WITH IMPROVED READABILITY — The Virogen® rubella slide test is a simple to run latex agglutination test for the detection of rubella virus antibody in serum. Clear readability and valid immune status is assured with distinct positive and smooth negative reactions. Separate studies have reported sensitivity as high as 99.4% and specificity greater than 99.9% when compared to the HAI assay.

Virogen® rubella slide test results correlate to the 1:8 dilution standard recommended by NCCLS keeping the contemporary professional guidelines. The test has a 12-month shelf life and is available in 100, 500, 3000 and 5000 test kits, available from all major laboratory suppliers. For further information contact Wampole Laboratories, Division of Carter-Wallace, Inc., Cranbury, New Jersey 08512, 1/800/257-9525.

AUTOMATED HAND CLEANSING — *Medi-Clens*, a breakthrough fully automated hand-cleansing system, is bringing the most demanding standards and procedures of bacteriological control out of the surgical suite and into emergency treatment rooms, pediatric, obstetric, gynecological and other in-hospital patient care areas. The basic unit consists of a see-through cabinet-like device into which the user places his or her hands through 2 inflatable "sleeves" that provide an effective yet comfortable water-seal. Automatically-triggered oscillating jets of water combined with anti-bacterial agents deliver an alternating non-abrasive 20-second wash and rinse. For more information contact Pacific Bio-Systems Inc., 3440 E. Broadway, Phoenix, Arizona 85040, 1/602/437-8244.

CDC DEFINITIONS FOR NOSOCOMIAL INFECTIONS 1988 — A new set of definitions has been developed by the CDC for surveillance of nosocomial infections. The definitions combine specific clinical findings with results of laboratory and other tests that include recent advances in diagnostic technology. The definitions are formulated as algorithms. For certain infections in which the clinical or laboratory manifestations are different in neonates and infants than in older persons, specific criteria are included. The definitions include criteria for common nosocomial infec-

tions as well as infections that occur infrequently but have serious consequences. To order, request: PB88-187117/KJV, *CDC Definitions for Nosocomial Infections*, 1988, 14 pp., \$9.50, plus \$3 handling charge, from NTIS, Springfield, Virginia 22161, 730/487-4650.

Recent Books

Worst Pills, Best Pills, 1988, Public Citizen, Washington, D.C., \$12.00. This book notes each year there are approximately 61,000 older adults with drug-induced parkinsonism, 32,000 with hip fractures attributable to drug-induced falls and 163,000 with memory loss or impaired thinking that is induced or worsened by drugs. Also, 243,000 older adults are hospitalized because of adverse drug reactions and hundreds of thousands suffer drug-induced dizziness or fainting. The book is printed in large type and the descriptions of the 287 drugs are grouped according to the condition they are prescribed to treat. The book comes with a drug worksheet for consumers to complete with their doctors.

Sang, Luis E., editor, 1988, *Gynecologic Surgery*, Medical Economics Books, Oradell, New Jersey, \$57.95. Numerous authors from various faculties throughout the United States, Canada and Germany combine to provide this review of gynecologic surgery. There are 44 chapters divided into the following sections: general surgery and anatomy, vaginal surgery, gynecologic urologic surgery, infertility surgery, laser surgery and management of complications of gynecologic surgery. The chapters are concise, illustrated with excellent line drawings and reference materials are very adequate. Graphics and typeset styles make for easier reading.

Mishell, Daniel R. and Paul F. Brenner, editors, 1988, *Management of Common Problems in Obstetrics and Gynecology*, 2nd edition, Medical Economics Books, Oradell, New Jersey, \$42.95. The editors and contributors of this text derive their knowledge from experience at the Women's Hospital at Los Angeles County-Univer-

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sity of Southern California Medical Center. The experience from more than 16,000 deliveries, 4,000 gynecologic operations and 45,000 emergency room visits in a year, provide a vast reservoir of clinical experience. Discussions are concisely written, charts and tables are pertinent and references are very adequate to encourage further reading.

Rosner, Jerome and Joy Rosner, 1988, *Vision Therapy in a Primary Care Practice/Procedures Manual*, Professional Press Books, New York, New York, \$40.00. Professional Press Books announces publication of a unique text/procedures manual package dealing with vision

therapy. *Designed for the primary care optometrist*, this 2-part package contains information about the use of out-of-office vision therapy and actual outpatient therapy procedures for the clinical management of vergence infacility, accommodation infacility, intermittent strabismus, amblyopia, constant strabismus and perceptual skills dysfunction. A systematic easy-to-apply method is described that the optometrist can use without making significant investments in office space, personnel, equipment or time. This book might be of interest to those physicians who wish to know some of the approaches to vision therapy by optometrists.

September 1988 Morbidity Report

Disease	Sept. 1988 Total	1988 to Date	1987 to Date	Most Sept. Cases Reported From These Counties	Disease	Sept. 1988 Total	1988 to Date	1987 to Date	Most Sept. Cases Reported From These Counties
AIDS	7	36	29	NA	Legionellosis	2	16	6	Linn, Scott
Amebiasis	4	16	25	Chickasaw, Greene, Plymouth, Winneshiak	Malaria	0	2	5	
Brucellosis	0	1	3		Meningitis aseptic	8	27	59	Scattered
Chickenpox	52	6475	7611	Scattered	bacterial	5	79	65	Cerro Gordo, Keokuk, Linn, Polk
Campylobacter	64	361	316	Scattered	meningococcal	0	0	3	
Cytomegalovirus	2	6	22	Black Hawk, Scott	Mumps	1	34	402	Jasper
Eatons Agent					Pertussis	2	22	48	Dubuque, Polk
Infection	2	21	46	Johnson, Linn	Rabies in animals	23	138	221	Scattered
Encephalitis, viral	2	10	9	Johnson, Polk	Reye Syndrome	0	0	0	
Erythema					Rheumatic Fever	0	1	3	
Infectiosum	6	113	880	Black Hawk, Buena Vista, Scott	Rubella (German measles)	0	0	1	
Gastroenteritis (GIV)	1103	14997	11642	Scattered	Measles	0	0	0	
Giardiasis	71	293	316	Scattered	Salmonellosis	41	186	140	Scattered
Hepatitis, A	3	38	86	Black Hawk, Pottawattamie	Shigellosis	62	227	60	Scattered
Hepatitis, B	6	72	98	Dallas, Jasper, Marion, Polk, Webster	Toxic Shock Syndrome	0	5	5	
Hepatitis, Non A-B	0	13	25		Tuberculosis total ill	10	45	34	Scattered
Hepatitis type unspecified	1	3	5	Polk	bact. pos.	10	38	34	Scattered
Herpes Simplex	70	845	929	Scattered	Typhoid Fever	0	0	0	
Herpes Zoster	0	0	2		Venereal diseases				
Histoplasmosis	2	14	12	Appanoose, Monroe	Gonorrhea	274	1624	2266	Scattered
Infectious mononucleosis	12	106	138	Scattered	Chlamydia	493	3388	2697	Scattered
Influenza, lab confirmed	0	110	67		Syphilis	1	17	24	Woodbury
Influenza-like illness (URI)	1630	27306	26193	Scattered					

Other Non-Reportable Diseases: Lyme — 1, Blackhawk; 1, Clinton; 1, Osceola; 1, Benton; 1, Henry; 1, Scott; 1, Wapello; Q Fever — 1, Dickinson; Ureaplasma Urealyticum — 1, Blackhawk; 1, Jefferson.

Well Elderly Screening Clinics

WELL ELDERLY SCREENING CLINICS were established in Iowa in 1976 when clinics in 7 counties and one city were funded by the Iowa Department of Public Health. Over the past 12 years, 26 counties have been added and there are plans to add 10-12 more counties this fall. There were 5,800 individuals seen in the clinics in FY88. Counties with Well Elderly Clinics are Dickinson, Palo Alto, Kossuth, Winnebago, Worth, Mitchell, Howard, Hancock, Cerro Gordo, Pocahontas, Wright, Franklin, Woodbury, Ida, Sac, Calhoun, Hamilton, Hardin, Black Hawk, Dubuque, Monona, Crawford, Story, Marshall, Tama, Harrison, Shelby, Polk, Poweshiek, Johnson, Scott, Pottawattamie and Lee.

The Well Elderly Screening Clinics provide health assessment and counseling services to older adults. The clinics also provide an entry point into the health-care system for medically underserved older adults. The goals of the clinic include educating older adults about normal aging changes, health-risk factors and related actions to minimize these risks, maintaining adequate eating and exercise patterns and making a habit of using health-maintenance services.

In addition, the clinics provide information about health care, mental health and legal and financial services. Patient education seeks to increase and/or reinforce their ability to manage prescribed regimes, control symptoms and make adjustments in lifestyle prompted by chronic health problems. The clinics do not provide medical diagnosis or medical treatment to participants.

The clinics are open to Iowans 55 years of age and older. They are staffed by registered

nurses knowledgeable of normal aging changes, unique health risks for older adults and community health-care services and resources. Clinics are held in a variety of settings including offices, churches, senior community centers and congregate meal sites. Most counties make an attempt to accommodate individuals in rural areas by rotating the clinic site. Currently, formal income guidelines or fees have not been set but donations by individuals are encouraged.

When individuals are seen in the clinic, the nurse usually conducts a health assessment which involves completing a comprehensive health history, a review of health habits, a physical assessment and selected screening tests, e.g., blood sugar, urine dipstick, vision screening and audiometric testing. A summary of the findings and recommendations are reviewed by the nurse.

When a medical problem is suspected, the individual is referred to their family physician. If the individual has no physician, the staff helps find one. A letter indicating the reason for referral is sent with the individual or mailed directly to the physician. About 30% of those seen in the clinics are referred to a physician. Referrals are made for a variety of reasons including elevated blood sugar/cholesterol levels, suspected breast masses and vertigo or heart palpitations. Referrals are also made for routine health maintenance activities such as pelvic exams. Individuals are routinely contacted by clinic staff to insure there is follow-through with medical referrals.

For further information about the clinics, please contact the Well Elderly Clinic Consultant — Joyce Bowdish, RN, MSN, GNP-C; Division of Family and Community Health, Iowa Department of Public Health, Lucas State Office Building, Des Moines, Iowa 50319; 515-281-7016.

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About Iowa Physicians

Dr. Randy S. Twito has joined the Albert Lea Regional Medical Group, P.A. Dr. Twito received the M.D. degree from Mayo Medical School in Rochester, Minnesota and completed an orthopaedic surgery residency at Loma Linda University School of Medicine in Los Angeles, California. **Dr. Douglas Prochaska** has begun family practice at the Lake Park Family Medical Center. Dr. Prochaska received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and served his residency in Johnstown, Pennsylvania. **Dr. David Lindgren** has joined Iowa Lakes Orthopaedics in Spirit Lake. Dr. Lindgren received the M.D. degree at Yale University School of Medicine, New Haven,

Connecticut and completed his residency at the University of Minnesota Medical School, Minneapolis, Minnesota. **Dr. Adel F. Makar** of the Pediatric and Adolescent Clinic in Mason City has been elected Fellow of the American Academy of Pediatrics. **Dr. Robert J. Byrum**, Davenport, has retired after 37 years of pediatric practice. Dr. Byrum received the M.D. degree from the University of Illinois at Chicago Health Sciences Center in Chicago, Illinois and joined the Davenport Pediatric Group in 1951. **Dr. Prakash R. Bontu**, Davenport, has been elected Fellow of the American College of Cardiology. **Dr. Loran Coppoc** has joined

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the staff at North Tama Medical Clinic. Dr. Coppoc was a surgeon in Ottumwa from 1950-1985. **Dr. Louis J. Scallon** has joined **Dr. Dean M. Harms** and **Dr. Daniel J. Vos** at Ames Ophthalmology Associates, P.C. Dr. Scallon received the M.D. degree at the U. of I. College of Medicine and completed his residency at the Medical College of Wisconsin, Milwaukee, Wisconsin. **Dr. Steven Rosebrock** has closed his family practice in Burlington. Dr. Rosebrock moved to Indiana where he works as an emergency physician in Martinsville and Indianapolis. **Dr. Jennifer Niebyl** and **Dr. Rudolph Galask** have been cited in a list of "The 107 Best Doctors for Women" in the October 1988 issue of *Good Housekeeping* magazine. Dr. Niebyl is a specialist in maternal-fetal medicine and Galask is a specialist in infections, both from the University of Iowa Hospitals. The magazine polled 250 department chairs and section chiefs in obstetrics and gynecology at major medical centers throughout the nation.

Deaths

Dr. Miles H. Archibald, 68, High Point, died August 24 at University of Iowa Hospitals. Dr. Archibald received the M.D. degree from the U. of I. College of Medicine and served his internship at Mound Park Hospital, St. Petersburg, Florida. He was co-founder of Valley Medical Center where he had been in general practice since 1961. Dr. Archibald was medical director of the Crossing Point at Fort Madison Community Hospital and a member of the Lee County Board of Health.

Dr. Everett B. Getty, 77, longtime Primghar physician, died August 15 in a Primghar hospital. Dr. Getty received the M.D. degree from the U. of I. College of Medicine and began practice in Primghar in 1935. After practicing 7 years, Dr. Getty served in the Army until 1946 at which time he returned to Primghar, practicing until his retirement in 1983. He was a member of the Academy of Family Practice and a life member of the Iowa Medical Society.

Dr. James B. Fraser, 73, Des Moines, died August 30 at his home. Dr. Fraser received the

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M.D. degree from the U. of I. College of Medicine and maintained his family practice in Des Moines until his retirement in 1986. He was a member of the American Heart Association.

Dr. Ralph H. Heeren, 87, Des Moines, died September 10 at Karen Acres Nursing Home in Urbandale. Dr. Heeren received the M.D. degree at the U. of I. College of Medicine where he later founded the Department of Industrial Hygiene and served as professor of preventive medicine. Dr. Heeren served as an assistant hospital epidemiologist at U. of I. Hospitals and Harvard University, Boston, Massachusetts and was an associate professor of preventive medicine at Tulane University School of Medicine in New Orleans, Louisiana. Dr. Heeren served with both the Oklahoma and Iowa Departments of Health. He retired in 1966 from the Iowa Department of Health's Division of Preventable Diseases for which he served as deputy commissioner of health and acting health commissioner.

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Help for Troubled Physicians

THE STRESS OF LIVING in modern society can be overwhelming, especially for someone whose vocation entails direct responsibility for human lives.

The Iowa Medical Society defines a "troubled physician" as one subject to problems resulting from physical ailments or emotional stress. The IMS is concerned about physicians whose performance may be threatened by abuse of alcohol or drugs, mental and physical illness or senility.

To encourage treatment of any problem that is a threat to a physician's ability, the IMS has established the Assistance Program for Troubled Physicians (APTP). APTP is a compassionate, voluntary program through which troubled physicians are encouraged to seek treatment or rehabilitation.

APTP, which is totally non-punitive, is directed by a committee of physicians knowledgeable about conditions which could lead to physician impairment. This committee works with physician advocates who are links in assuring a troubled physician receives appropriate treatment.

Requests for assistance from the APTP usually come from a troubled physician's spouse, another family member or a colleague. When the IMS receives a request, the APTP chairman is notified immediately and initiates steps for contact with the troubled physician by a physician advocate. The physician advocate first contacts the writer/caller to discuss the expressed concerns. If it is determined there is sufficient reason for action, the physician advocate arranges to visit the troubled physician and, if necessary, others involved.

The advocate encourages the physician to seek help, assists him or her in entering treatment and maintains contact and support. Throughout the process, all information con-

cerning a physician receiving assistance through APTP is regarded as confidential.

However, under Iowa law, physicians must report first hand knowledge of "acts or omissions" of a licensed physician as defined by the Board of Medical Examiners as grounds for revocation or suspension of a license. If actual impairment is determined during the APTP's advocacy process, appropriate referral will be made by the APTP Committee to the BME.

The IMS also recognizes the troubled physician is not the only person affected. When a physician is troubled, so is his or her family. The IMS Auxiliary has established a program which offers support and information to medical families dealing with abuse of alcohol or drugs.

The program is called *HELPLINE*, and it was developed in consultation with the Society's APTP Committee. Physicians' spouses who have experienced the illness of alcohol and drug dependency have volunteered to participate in this important service. As soon as a call for help is received, a member of the Auxiliary's *HELPLINE* team is contacted. The caller receives a response within 30 minutes and complete confidentiality is assured.

Clearly, there is much that can be done for troubled physicians and their families. There is certainly no need for anyone to suffer alone. At the Iowa Medical Society, comfort, hope and help are only as far away as the telephone.

November 1988

Iowa Medicine

Daniel M. Youngblade, M.D.

President's Privilege



Life After Work

THIS MONTH'S ISSUE focuses on retirement, a subject important to each and every physician and his or her family. Hundreds of issues confront us as we think about our financial future — financial planning, pension funds, life insurance, annuities, collectibles, real estate and management by a financial planner, investment advisor, stock broker, bank or insurance sales person.

A more important part of retirement planning concerns the question "What do I do after I stop practicing?" To retire now or retire later is only a minor part of adequate planning. Retirement could be as easy as slipping into a comfortable pair of old shoes and a worn out sweater. But most of us have lived as compulsive overachievers who have never learned how to relax. We have been committed to the profession of medicine with no thought for anything else.

We need to plan in advance and look ahead to help determine what retirement will be. Part time work, travel, locum tenens, a part time business, sharing knowledge gleaned over a lifetime or development of a hobby, sport or activity are possibilities we must explore far in advance so retire-

ment won't be something we regret. We need to look into the future before we stop practicing in order to be ready for a rewarding "life after work."

Help is available if we need it through organizations in and outside organized medicine. The AMA placement service, the American Association of Senior Physicians, AARP, Earthwatch, Elderhostel and hundreds of other organizations have help available for planning your retirement.

* * *

Let me take this opportunity to wish all of you a joyous holiday season and a rewarding and fulfilling new year.

A handwritten signature in cursive script that reads "Daniel M. Youngblade M.D.".

Daniel M. Youngblade, M.D.
President

Gearing Up For Retirement

PATTY L. DUNKEL
Chicago, Illinois

The author discusses how active participation in your own retirement can yield more successful results.

GEARING UP FOR RETIREMENT? Why not winding down? Because retirement is a voluntary career change, and you will want to prepare for it with the same zeal and care with which you planned your career in medicine.

You will be happiest as an active participant rather than a passive observer in the process of your own retirement. To be sure, change gives rise to uncertainty and uncertainty to anxiety. Anticipating the changes you will face will help you make decisions that will reduce that anxiety and lead to better health, a rewarding social and professional life and economic security. Active participation will help you hone your skills for coping with change, not only in retirement, but also during the rest of your career in medicine.

Contemplating retirement is not easy for physicians. In the words of one ophthalmologist, "I am used to being the captain of the ship. When I say jump, people ask, 'how high?' I'm going to miss that." Generally,

you will need to plan for 2 kinds of change: changes in your financial situation and changes in the role you occupy in society, including patterns of activities and relationships with others.

Role Changes

Satisfaction in retirement depends less on how active you are than on your ability to develop a way of life that provides continuity with your past and continues to meet your long-term needs. Some physicians find retirement tolerable only if they are able to find activities that preserve their identity as doctors. Others welcome the opportunity to meet their needs through interests outside of their medical careers.

For example, some physicians who found themselves in the first category sold their practices while the value was high and are either working as an employee or a partner with the buyer, at a more relaxed pace. This is one way to discover whether a leisurely lifestyle is agreeable. Some who fit into the second category are managing a variety of small businesses, chronicling local history, serving as docents in museums, developing skills as artists or craftsmen and studying literature. At least one is the chief of his community's volunteer fire department.

Most physicians find they fall somewhere between these 2 extremes. For example, one used his knowledge of medicine and the local medical community to organize and manage the first home-based hospice in his hometown.

No matter where you fall on the continuum, you will want to consider how you will meet your needs for such things as achievement, prestige, helping others and

Patty Dunkel is program director with the American Medical Association Department of Practice Management.

intellectual stimulation. Remember, it is continuity with your past and meeting your long-term needs that will contribute to satisfaction with life and to your ability to be a valued member of your community and a good companion to your spouse, family and friends.

One benefit of retirement is you will have more time to spend with your spouse, who should be as closely involved in your retirement planning as is comfortable. You will come to know each other better and find new ways to support each other as you discuss your plans for personal and professional activities and various financial options. While togetherness is wonderful, you both should plan for individual activities, too. The old adage has meaning — you married each other for better or for worse, but not for lunch.

Financial and Legal Issues

Active anticipation will help you determine what to expect financially and whether you will need to make changes to meet your objectives. In general you will want to have sufficient income to maintain the same standard of living after retirement; an adequate return to your spouse to maintain that same standard for him or her after your death; medical insurance which, when combined with Medicare, will pay for the majority of medical expenses you may incur; and a nest egg for special needs and wants.

You may need the assistance of advisors to help you develop a plan that meets these objectives. These advisors may include an attorney who can draw your will and set up trusts; an accountant or tax expert to verify the integrity of your financial records and clarify tax implications; a financial planner to advise you on your financial plan; and brokers to negotiate the purchase and sale of your practice, real estate and various other assets such as stocks and bonds.

Perhaps you are already working with some of these professionals — advisors whom you trust. If you are interested in exploring further, ask your colleagues and friends for recommendations. Your banker may also be an excellent source of referrals. In any event, be aware of any vested interests your advisors may have. Some advice may be free because the person who offers it

**Patty
Dunkel**



earns a living from selling a product or service. Even if you have professionals in whom you have confidence, they are only advisors. You will want to make the important decisions yourself.

Should you elect to sell your practice, you should retain your own lawyer and accountant to advise you about the many legal and tax consequences and to help you assign economic value to your practice. While experienced consultants are not always easy to find, your state medical society can help you locate someone. Some physicians have hired brokers to effect the sale of their practice. Others have found their own buyers.

Good financial and legal planning calls for flexibility. You should review your financial and legal plans every 6 months. The financial instruments that allow you to continuously achieve the objectives of your plan should shift in relation to the general state of the economy, changes in tax laws and your financial and personal needs.

Begin your planning by preparing a summary of your assets (including the estimated worth of your practice), liabilities, income, expenditures, benefits from retirement plans and insurance protection. Identify the major gaps. Armed with this information and with help from your advisors and your spouse, you may enjoy planning the deployment of your assets to support your personal and professional retirement activities.

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Marion E. Alberts, M.D.

Questions and Answers

Time to Plant the Roses

The author, scientific editor of IOWA MEDICINE, discusses his feelings about his recent retirement from a 40-year pediatric practice.

When did you begin planning for retirement? When did you actually retire?

During my internship, I had a conference with an insurance broker who convinced me plans for retirement should commence early in professional life. That planning included a well-rounded insurance program with cash value buildup. I was also a member of the U.S. Naval Reserves, which afforded eventual retirement benefits.

Continued planning, seeking opportunities for possible retirement activities and utilizing competent financial advisors were of great aid in my retirement in May, 1988, 40 years to the day after starting my internship.

What are the most important practical considerations for a physician retiring from practice?

It is my firm belief one must be realistic in retirement plans. Life is not just another round of golf, another party, another expensive trip to an exotic island or moving away from the home when the children are raised.

A healthy attitude about life values, outlets for keeping busy and a close working ar-



range with one's spouse can make the retirement years happy ones.

From both an emotional and a practical standpoint, what is the best thing you can say about retirement? What is the worst?

I have been involved in the pressures of a time shortage since I was in high school. I have seldom had the freedom of doing what I wanted to do without considering the re-

(Please turn to page 568)

straints and pressures of my profession (all but 6 years as a solo pediatrician).

In recent years, the increased work load of a large practice and the added business considerations took their toll. A load has been lifted from my shoulders. My barber said it well, "How come you keep smiling all the time?" The reason I'm smiling is because I now have time to tend my garden and enjoy other things I've let slide over the years.

So far I haven't found any problems with retirement other than I miss the camaraderie of hospital rounds and the laughter (and tears) of the many children I have served.

What advice would you give to physicians who equate retirement with being put out to pasture?

Retirement is a new beginning. We advance through several phases of life — childhood, youth, early years in the work force, the productive years in our profession and then the ultimate of resting on our laurels. I feel many who do not retire are too egotistical about their position or are afraid of losing stature or prestige.



Retirement is an opportunity to embark on activities sublimated during the working years and a culmination of a job well done. Retirement is what you want it to be — planning ahead is the keystone.

Time to Smell the Roses

We started out together in 1944 climbing a ladder. Each step was a difficult one.

- Step 1 . . . Medical school
- Step 2 . . . Internship
- Step 3 . . . Pediatric residency
- Step 4 . . . Starting a practice
- Step 5 . . . The Top

After being on that top step for 35 years, it was time to come down. The step down was a giant one but once down it has been "great." When you see how hard your spouse has worked over these years you are thankful for every minute you have together.

Now, we are free to spend time with our children and grandchildren and, most important, to share time with each other. Yes, it is great and we do have time to smell the roses.

— Mrs. Jeannette Alberts.



Happy Holidays

*Wishing you and your families
every happiness
this holiday season
and throughout
the coming year.*

**The Iowa Medical Society
Auxiliary**



Arsenic Poisoning

LAURENCE FUORTES, M.D.

Iowa City, Iowa

Accidental ingestion of arsenic — usually occurring in children — is a significant problem. The author discusses several case histories and suggests ways the number of arsenic poisonings could be reduced.

ARSENIC POISONING is a significant problem. In 1984, the American Association of Poison Control Centers reported 5,000 cases of heavy metal ingestion. The most common heavy metal involved was arsenic with 1,200 reports of poisoning. Children under age 6 accounted for 847 of these cases of arsenic ingestion. The vast majority of these cases were not serious. However, most may have been preventable.

Arsenic Exposure

Arsenic is a common element in our environment and has many agricultural uses. It is used in herbicides, insecticides and rodenticides. Arsenic has been used in treatment of

lumber and may be released upon combustion. Perhaps the most common industrial exposure to arsenic occurs in the smelting industry, specifically copper smelting and exposure can occur to arsenic trioxide (As_2O_3) or to arsine gas (AsH_3). Other reported routes to arsenic exposure have included use of homeopathic medicines and opiates, specifically in immigrants from southeast Asia, well water tainted with pesticides and ingestion of certain building materials.

Although arsenic exposure can occur from any of these sources, those of greatest clinical significance are apparent accidental ingestion — usually in children — and intentional administration in suicide or homicide attempts.

The most common source of accidental arsenic ingestion in children is over-the-counter ant poison. Terro, Jones and Cowley ant poisons are all various concentrations of sodium arsenate in dextrose solutions. These sweet, syrupy solutions are as attractive to toddlers as they are to ants or rodents.

The commonly cited lethal dose of arsenic is 120 mg elemental arsenic, although there is large variability in clinical response. The trivalent form of arsenic is more toxic than the pentavalent form. Organic arsenicals are relatively non-toxic.

Arsenic poisoning is notoriously difficult to diagnose due to the myriad of constitutional complaints with which patients present. Information regarding potential exposures might be unattainable or intentionally withheld.

Dr. Fuortes is associated with the Institute of Occupational Health, Department of Preventive Medicine, University of Iowa College of Medicine, Iowa City.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF DECEMBER

Clinical presentations of arsenicalism represent a wide spectrum largely dependent on route of exposure, chemical form and dosage.

Review of Arsenic Poisonings in Iowa

Chart reviews were conducted at 3 major Iowa hospitals. Nineteen cases of arsenic poisoning were identified by reviewing discharge summaries for 1979-1985.

Clinical presentations are presented in Table 1. Of 19 cases, 11 were adults and 8 were children under 10. The sources of arsenic are listed in Table 2. A source was identified for 5 of the 11 adults (suicidal ingestion of pesticide) and for 6 of the 8 children (accidental ingestions of pesticide). In each of the 7 adult cases with no identifiable arsenic source, attempted homicide or suicide or intentional dosing for some secondary gain were strongly suspected. The 2 children for whom a source of arsenic was unknown both died after repeated episodes of acute illness. Homicide was suspected.

As shown in Table 3, the diagnosis of arsenicalism is often elusive. Each of the 6 adult cases without a self evident diagnosis of attempted suicide underwent numerous diagnostic tests before the final diagnosis was reached. Four of the 6 underwent extensive gastroenterologic workups and 3 of these 4 underwent laparotomies before the diagnosis became evident.

Case 1: Acute Arsenicalism

A 3-year-old boy was found playing with a one ounce bottle of Terro Ant Poison. The bottle was half full and pesticide was noted on the child's lips, hands and clothes. The child developed spontaneous nausea and vomiting. In the emergency room the child underwent gastric lavage and was given activated charcoal.

The child experienced recurrent vomiting, which tested guaiac positive, over the first 24 hours. As the quantity ingested was unknown and the child was symptomatic, he was treated with Dimercaprol 3mg/Kg every 4 hours and tapered to every 6 hours over a 5-day period.

On the third day of treatment a urine arsenic level showed 4,800 µg/liter. This dropped to 1,800 µg/liter by the fourth day and 580 µg/liter by the day of discharge. Also on the third

TABLE 1
CLINICAL SYMPTOMS AND FINDINGS

	Adults	Children
Vomiting (spontaneous)	10/11	6/8
Diarrhea	8/11	4/8
Hematochezia	4/11	2/8
Skin or Nail Changes	4/11	—
Neuropathy	5/11	—
Leukopenia	5/10	1/8
Anemia	5/10	2/8
Eosinophilia	3/10	2/8
Thrombocytopenia	1/10	—
Hepatitis*	8/11	3/8
Renal Failure	1/11	1/8

* (Hepatitis for the purpose of this study was defined simply as transaminase elevation. Ethanol is likely to have been at least a contributing cause for 2 of the adults.)

TABLE 2
SOURCES OF ARSENIC

	Adults	Children
Terra ant poison	2/11	6/8
Triox	1/11	—
Jones ant poison	2/11	—
Unknown	6/11	2/8

TABLE 3
INITIAL DIAGNOSES AND SOURCES OF ARSENIC IN ADULTS

Case	Initial Diagnoses	Source of Arsenic
1	Surgical abdomen Post operative leukopenia Post operative Guillain-Barre	Undetermined
2	Cholecystitis Subsequent Erythro-leukemia	Undetermined
3	Intermittent Intestinal Obstruction	Self administration of Terro
4	Hepatitis Recurrent gastritis	Undetermined
5	Peptic ulcer Hepatic Encephalopathy	Undetermined
6	Transient Ischemic Attacks	Undetermined
7	Toxic Neuropathy	Undetermined
8	Suicide attempt	Triox
9	Suicide attempt	Terro ant poison
10	Suicide attempt	Jones ant poison
11	Suicide attempt	Jones ant poison

day, an SGOT was slightly elevated at 92 I.V./liter. The child's family received a social service consultation regarding home safety and the child was discharged with no further symptoms on the seventh hospital day.

Case 2: Chronic Arsenicalism

The second case had a very similar presentation. A 50-year-old warehouse worker was hospitalized twice in one year with episodes of severe epigastric distress and volume depletion. Upon initial hospitalization, he gave a history of a 10-day flu syndrome with repeated nausea, vomiting, diarrhea and inability to tolerate food or liquids. The patient was afebrile and showed marked volume depletion. He had a 4-fold transaminase elevation and minimal alkalinephosphatase elevation. The patient had a low grade anemia and a white count of 5,100, somewhat low for the degree of his distress.

A gall bladder ultrasound revealed evidence of "sludge" with no evidence of stones or thickening of the gall bladder wall. The patient's symptoms and findings were compatible with biliary colic. He underwent a cholecystectomy and recuperated uneventfully. In the next 10 months, the patient was hospitalized twice with episodes of epigastric distress, nausea, vomiting, diarrhea and liver enzyme elevations.

At the time of his second hospitalization, the patient had profound leukopenia, mild anemia and absolute eosinophilia in addition to the above findings and symptoms. A bone marrow biopsy was interpreted as severe dyserythropoiesis consistent with an evolving erythroleukemia, possible heavy metal toxicity or hydrocarbon toxicity.

In the ensuing months, the patient's hematologic picture normalized without treatment. However, his neuropathy became more troublesome. A high body load of arsenic was documented by hair analysis revealing 1,050 micrograms of arsenic per 100 grams of hair. (Normal value is less than 65 micrograms per 100 grams of hair.) In review, this man's medical history and records — including the biopsy from his gall bladder surgery — are most consistent with recurrent arsenic intoxication.

An investigation performed by the health department included occupational history for possible exposures, symptom review of all the patient's co-workers and an examination of the

home and work environment. No source of exposure to arsenic could be documented. The findings were discussed with the patient and his family by members of the health department and physicians. Subsequently, the case was referred to the local police criminal investigation division for further review.

Diagnosis

Although careful inquiry into potential toxic exposures is very important, the exposure might be unknown or willingly suppressed by individuals providing the history. Blood levels of arsenic are often not helpful in establishing the diagnosis but may be of value in guiding chelationtherapy. Urine levels, best taken as 24-hour excretions, are more helpful in documenting arsenic intoxication. Arsenic loads are renally excreted at a rate of approximately 70% of a load in a 24-hour period. If there is significant delay between ingestion and presentation, toxic levels might be missed. Deposition of arsenic in hair and nails is helpful in documenting arsenic exposure. However, this is of clinical use only in documenting chronic arsenicalism as the time needed for deposition and clinical detection in hair and nails is too great to be useful in documenting acute intoxications. Urine arsenic levels in excess of 200 micrograms per liter and hair arsenic levels in excess of 65 milligrams per hundred grams are presumptive evidence of an increased body load.

Interventions

Accidental poisonings, which used to occur with alarming frequency, have been greatly diminished by educational campaigns and institution of child proof containers. There has long been a network of reporting cases of suspected child neglect, child abuse or children otherwise at risk to social service or other legal authorities. Physicians dealing with an adult population are less likely to see accidental toxin ingestions and should be aware that evidence of toxin ingestion might suggest a patient at risk for future injury.

Given the presumption that ingestions of toxic substances by adults are most likely to represent acts of violence or intention to harm oneself, referral to social service networks, mental health facilities or criminal authorities

(Please turn to page 574)

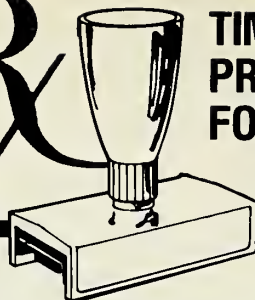
must be considered. In the case of accidental arsenic ingestion, as in other pediatric accidental poisoning, restriction of the source of toxin must be considered. The most common sources of accidental poisonings are insecticides and rodenticides. The sources of intentional poisoning are often not documented. It would seem reasonable that the insecticides and rodenticides in question be sold only in amounts sufficient to kill rodents or ants and not in quantities that would endanger children.

It is suggested by the author that the sale of arsenic in Iowa be restricted in quantity and/or concentration. It is expected this will drastically reduce the number of serious accidental poisonings and serious intentional poisonings. Other measures to be considered include use of child proof containers and some means of registered purchase.

References

References for this article are available either from the author or the editors of *IOWA MEDICINE*.

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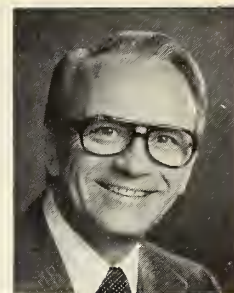
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Marion E. Alberts, M.D.

The Editor Comments



Business and Pleasure

THE STATE MEDICAL JOURNAL Advertising Bureau sponsors a 1-2 day workshop every 2 years. They are designed to help editors of medical journals improve their management and editorial skills. In October I attended the workshop in West Virginia. I have served on the SMJAB Board of Directors for a number of years, and during the 18 years I have been with *IOWA MEDICINE* there have been tremendous improvements in the state medical journals. Editorial styles have changed, covers have been improved and the overall value to the medical profession has been enhanced. Recent readership surveys have shown *IOWA MEDICINE* is well received and for that we are pleased. We shall continue our efforts to give our members a high quality journal.

As 1988 closes we can look back on our accomplishments of the year. We have had a good mix of themes and topics. We have used editorial resources outside the medical profession. Believe me, when I talk with state medical journal editors from other states, *IOWA MEDICINE* ranks high. Our members should be proud.

The meeting in West Virginia had a new twist for me. I did not have the pressure to get back to the office at a certain time, nor did I have last minute appointment arrangements to make before leaving. In keeping with the theme of this issue of *IOWA MEDICINE*, retirement is great. We kept the wheels rolling and covered over 3000 miles through 10 states before returning to Des Moines.

At this time nature presents the most beautiful panorama of color that can be imagined. The Master Painter presents a landscape of colorful foliage mere mortals would find difficult to reproduce with brush and paint. We can be thankful we live in such a beautiful country where we can experience oceans, lakes, streams, forests, mountains and plains . . . each colorful in its own way. A sunrise over the ocean, the wisps of smoke from a backwoods dwelling in the mountains, the panorama of multi-colored leaves over a mountainside inspires one to appreciate life and the opportunity to cast aside the burdens of many years of professional life to the years of reward . . . retirement. — M.E.A.

Elected to SMJAB Post

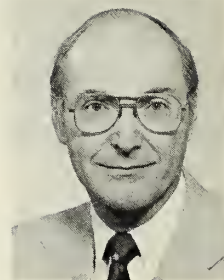
Marion Alberts, M.D., West Des Moines, has been elected vice president of the State Medical Journal Advertising Bureau (SMJAB). The election took place at the SMJAB Board of Directors meeting October 14.

Dr. Alberts, scientific editor of *IOWA MEDICINE*, has served on the SMJAB Board since 1975.

SMJAB serves as a clearinghouse for state medical society advertisements. In addition, it arranges educational seminars for journal editors, focusing on design, content, editorial writing and advertisements.

Richard M. Caplan, M.D.

CME Notebook



Of Two Who Left Medicine

NEAR HAMPSTEAD HEATH in northwest London sits the home where lived the great English poet, John Keats, soon after his career as a medical student at Guy's and St. Thomas's Hospitals. The dwelling has been handsomely renovated since his stay there in 1818-20, but has ample authenticity to warrant a 20-minute subway ride from the center of London, plus a half-mile walk.

One feature is the bedroom where Keats coughed blood upon his bedsheet, and recognizing its arterial color, announced to his landlord that not only his mother and brother had consumption, but he, Keats, would also soon die of it. On the wall hangs his certificate: 5 years of apprenticeship and a course of study just completed (1816); he was thus a graduated apothecary (approximately equivalent then to a general practitioner).

His accurate premonition of doom led him to spend his remaining time writing poems and letters as fully and furiously as he could. He accepted the suggestion of poet friends to go to Italy, where inspiration and better health would surely await. Inspiration, yes; better health, no, and he died in Rome after a final 6 months of extraordinary creativity.

Keats had written poetry before. In fact, his most famous poem, "Ode on a Grecian Urn" with the much-quoted lines,

Beauty is truth, truth beauty, — that is all
Ye know on earth, and all ye need to know

was written in the house I visited. Although his poems enjoyed a bit of publication and success while he lived, there was too little time left for recognition, only enough to pour out his passionate gifts of imagination. And certainly no time to attempt medical work.

His biography, as his poetry, is quintessentially romantic. Had Keats not identified or prognosticated correctly about his illness, or had he not had the illness at all, he might have entered the mainstream of medical practice of his day. (Of course, his poetic fancy might then have been less frenzied, less beautiful, to judge from this utterly prosaic note I copied from his handwritten medical notebook: "The lower jaw is frequently dislocated from receiving a slight blow while the mouth is open." Although clinical events sometimes bubble with high drama, the language of reporting it, even in the hands of Keats, is usually pale in the extreme.) But death intervened.

Another physician who left medicine was a man of no fame who last year moved to Iowa City to acquire enough CME credit to reactivate his medical license. He needed

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150 hours of Category I, for he had retired from practice at age 50, 10 years earlier, when several major illnesses befell him. With time, he recovered well, so well that after a decade of disability, his curiosity and restlessness, plus financial pressure prompted him to wish to resume clinical practice. He planned to commit several months to his re-tooling, although several weeks could have satisfied his legal requirement.

Occasionally he stopped for a chat. His perceptions about himself and his circumstances were unusually acute. He felt astounded at the changes in his discipline during the 10 years he'd been away. He gave examples, and as he related his intellectual and emotional responses to his CME activities, he said, "You know, I feel like Rip Van Winkle." That allusion seemed to me perfect, so apt that I urged him to follow his instincts and write about the Rip Van Winkle Effect. I expressed confidence it could be published and might even introduce a fresh descriptive term into the discourse of continuing education.

Letters to the Editor

Business and Medicine

Dear Sir:

Many years ago I met Dr. Richard M. Caplan and I was impressed by his interest in medical education. For many years I have enjoyed his articles in *IOWA MEDICINE* and its predecessor Journal. However, I feel compelled to take exception to his comments about the "Business of Medicine" in his article by that name in the September, 1988 issue.

Dr. Caplan strongly disagrees with the assertion that the business of medicine is as important as the practice of medicine. Having been a medical management consultant for the past 40 years and having worked with thousands of doctors in many hundreds of offices, I have learned you cannot separate the business of medicine from the practice of medicine. If a doctor or group

My new friend agreed to pursue that idea and accept both my challenge and my help. But some weeks later he returned, ill, to describe a series of curious symptoms that had demanded his attention, stolen his energy and kept him from rounds, conferences, the library and so on. A diagnostic workup, then in progress, ultimately revealed advanced cancer. Over the next few months he grew progressively weaker, but managed to cope with his feelings of anger and depression. With the understanding help of his spouse, his medical personnel and the great soothing assistance of the Iowa City Hospice, he elected not to pursue the tiny glimmer of hope for slight life-extension drugs and x-rays might have provided him.

His attainment of Kübler-Ross's stage of "acceptance" was the most successful and tranquil I have seen. When I last visited him, dying at home, he expressed no bitterness, no regret. Regret was one of my many emotions, that he was never able to write his own fascinating story of the Rip Van Winkle Effect. For death intervened.

of doctors desires to provide the patient with the best possible medical service, it is vital they give sufficient attention to the business affairs of the practice to make certain they are as efficient as their medical ability.

Poor policies mean poor service to the patient. For example, appointment scheduling is a weak spot in many offices often resulting in long waits for patients and/or a dissatisfying amount of time with the doctor. Poor billing and insurance claim filing procedures likewise often cause both inconvenience and irritation to patients. Because a doctor's staff often spends more time with the patient than does the doctor, poor personnel management policies can lead to poor public relations and insensitive handling of patients. Fair fees for service is another area of vital concern to both patients and doctor.

Experience has shown the most medically proficient doctor cannot practice the best possible medicine unless he/she has ef-

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Health Care Coverage That Wasn't Born Yesterday

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efficient routines and procedures and a quality staff to implement them.

I believe a strong case can be made for the statement that the business of medicine and the practice of medicine are integral and must be given proper attention accordingly.

— Millard K. Mills, *Certified Professional Business Consultant, Waterloo, Iowa.*

Editor's Note:

I'm delighted one of my columns sparked a response, even if the writer thinks he disagrees with me. I don't agree that we disagree. Because I have long known Mr. Mills and respect his career as a professional management consultant to many Iowa physicians, I am not surprised that he would argue for the great importance of properly considering and performing the *business* of medicine. And I agree with that. To debate whether the *business* or the *practice* of medicine is the *more* important is likely futile, because they intertwine so completely, as Mr. Mills says. It's analogous to debates about genes-vs.-environment or, in education, process-vs.-content.

In my published rumination I used the word "enlightened" to congratulate residency programs that provide some business training. But the main thrust of my piece addressed, I thought, the issues of the *timing*, *locus* and *methods* of such instruction. Those subjects we still might debate at length, even though we agree about the goal. — Richard M. Caplan, M.D., *Associate Dean for Continuing Medical Education, University of Iowa College of Medicine.*

Quality of Care

Dear Editor:

In the October, 1988 issue of *IOWA MEDICINE*, it was of interest to note that a majority of the physicians interviewed thought that professional review organizations were somehow expert in defining quality of care. I offer the premise that on close analysis most of the physicians' perception of quality is much more subjective than objective and in fact is quite prejudicial when evaluating the performance of their colleagues.

Hence I offer the recommendations of the American Academy of Family Physicians as adopted by their Congress of Delegates in October of 1988.

"In order for meaningful peer review to take place, adherence to the following concepts is essential in the development of any guidelines:

(a) Cost containment, while an important consideration, should in no way be allowed to influence negatively the quality of care afforded patients.

(b) Standards of care should be in accord with the general tenor of guidelines of national specialty societies.

(c) Clinical policies in patient care should be established by practicing physicians and based upon needs appropriate to the local area. Even though health care is provided under uniform standard of care, local circumstances and considerations such as

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frequently found in inner city or rural areas may modify final interpretations as to whether or not a standard of care is met.

(d) The omission of the performance of any portion of a guideline should not necessarily be interpreted as a breach of good medical practice or should addition of services, not included in a specific guideline, be interpreted as inappropriate or unnecessary in the care of a specific patient. Such cases should be weighed individually, and during the review, the physician providing the care always given the opportunity to add to the documented details of a case.

(e) Guidelines should in no way be restrictive with regard to physicians' qualifications other than on the basis of training, experience and demonstrated ability.

(f) Guidelines for hospital admission need not be on a diagnosis basis only, but may be based on problems, symptoms, social factors or physical findings.

(g) Any guidelines must include provisions for consultation by family physicians where indicated or requested.

(h) In a prospective payment system (such as seen in Medicare), utilization review provided by a physician should be considered the most valid determiner of the correct diagnostic category and a physician the most knowledgeable interviewer to prevent premature discharge from the hospital or other violations of the quality of care provided to individual patients.

(i) Punitive aspects should be consistent with federal and state regulations and applied only after the full opportunity of due process has been allowed to the physician.

(j) The end product of peer review should be improvement of patient care through physician education." — *Francis L. Pisney, M.D., A.B.F.P., Iowa Falls.*

Vital Records — New Certification in 1989

Iowa has maintained a state registry of marriages, births and deaths since 1880 within the Iowa Department of Public Health. The Department cooperates with the federal government's efforts to compile national statistics for these events. This is done by contract with the National Center for Health Statistics

(NCHS), which provides partial funding to help subsidize the overall cost.

Iowa provides a basic data set of selected items from the certificate on a scheduled basis. NCHS has expanded the minimum data requirements, (last revised in 1978) prompting a revision of Iowa's certificates for live birth, fetal death and death to be effective January 1, 1989. The Department sought to make only those changes necessary to meet the data requirements of NCHS and to make the document's format more sensitive to those who complete it.

The Department distributed the new forms and instruction booklets to the county registrar (clerk of district court) in early November. Instruction booklets and sample forms will also be provided to Iowa physicians whose specialty might involve them in the completion of birth, death and fetal death certificates. If you have not received information and are interested in a copy, contact the Vital Records Bureau of the Iowa Department of Public Health at 515/281-6581.

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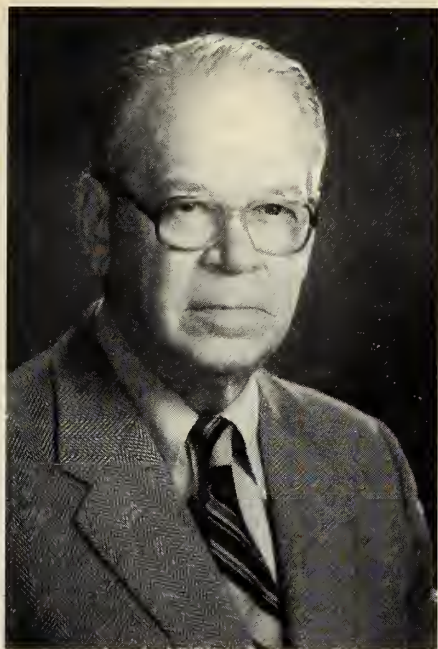
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Daniel
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Class Reunion

A RECENT MACNEIL-LEHRER television program included an essay by a Dartmouth graduate who attended his 25th class reunion. 25th? Well that may be a big deal in Hanover for the "men of Dartmouth" (as the school song would have it), but friends, listen to this report about a reunion that really counts: a 50-year reunion.

Last June, in Iowa City, the University of Iowa medical school class of '38 held its 50-year reunion. One statistic, then on to other matters: Of a class of 83, 45 are still alive and 20 attended the reunion, coming from near and far, from New Hampshire, Michigan, Florida, California, Colorado, Texas, Massachusetts, New York, Kansas, Indiana and, of course, from cities and towns in Iowa.

There is no way to get the "feel" of an event like a 50-year reunion without mentioning individuals — who showed up, for instance, and what had transpired in those many intervening years. We will go that route, then, on a very limited scale, using no names. In other words — complete anonymity is the watchword.

It can be reported with pride that one member of the class is famous. Honored by

his university as an "outstanding alumnus," a former chief of a surgical department of a major medical school, he is recognized by his peers nationwide as a pioneering, innovative and talented cardiac surgeon. Therein lies his fame, yet that is not the best part of the story.

The best part is this: He entered the freshman medical class in 1934 as a recent immigrant from Austria. He spoke very poor English and was sometimes the butt of callous humor. True/false exams, innundated with double negatives, were the bane of everyone's existence, but were almost a disaster for this recent transplant.

That he survived at all is commendable; that he achieved fame is remarkable. He appears to have but one character flaw: he scarcely knows how to spell Hayden Fry, and he is neither enthralled nor obsessed by the activity in Kinnick Stadium. Oh well, nobody's perfect.

There was the classmate who was accompanied to the reunion by his 2 sons, one a neurosurgeon, the other a urologist. He was clearly proud of his boys, but the most striking thing was the manifest pride of the boys in their dad, as if, knowing of his struggle to become a doctor, they wished to testify to the strength of his character. For, you see, he had to scratch to make ends meet while going to school — working at night, in class during the day. And he made it.

Does every class have a member who has been a president of his state medical society? Hardly. Well the class of '38 does — one who, having shown a talent for leadership and political savvy, became president of the Iowa Medical Society.

Although no poll was taken, presumably all members at the reunion had retired from active practice. But no, there was at least this one exception, an orthopedic surgeon from a region sometimes referred to as the land of tinsel and glitter. Having been divorced (so it was said), he brought along his girlfriend in lieu of a wife. The girlfriend, attractive, vivacious, almost certainly close to 30 years younger than her companion and the prevailing age at the reunion, seemed to be having the time of her life amongst the elders. The doughty classmate? Obviously a man of exceptional genes and hormones.

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The number one student of the class was there, as were 4 of the 5 top students of the class — proving nothing except that they have a good record for longevity.

All in attendance seemed to be reasonably prosperous, although there was no way of knowing, or even caring, whether anyone was particularly affluent. At that stage of life, riches beyond a comfortable income, beyond health and dignity, are not very important.

Only one jarring note was heard, and that privately and at the time of farewells. One classmate confided to another that his wife was now dead and he was unhappy, bored and at loose ends in retirement. Which raises questions: How do doctors, having spent their active years in responsible and demanding activity, adjust to retirement? How do they avoid malaise and boredom? The answer is some don't.

Boredom is truly the enemy. Everyone retiring must come to grips with it. Some

can, others can't. Everything is out there to try: administrative positions, golf, travel, cards, study, reading, elder hostels, writings, adult education — you name it; it's there. It's not really the same, though.

The least fortunate are those who turn to alcohol. It has been said that the most common medical problem in Sun City is alcoholism. The poor old souls are so bored they live for the daily cocktail hour. Perhaps the most fortunate are those who, because of circumstances, remain intimately and daily involved with grandchildren.

Old age is a tricky business. It's difficult for the young to believe, but it is certain every doctor who reaches the age of 70 looks back in astonishment, for it was only yesterday he or she was a new doctor in town, the kids were young, rapport with contemporaries was strong and life was full and exciting.

The 50-year reunion is now behind us. To hell with it. Let's go for 60! — *Daniel F. Crowley, M.D., Class of '38.*

Recent Books

Horsley, Jack E. and John Carlova, 1988, *Testifying in Court: A Guide for Physicians*, 3rd Edition, Medical Economics Books, Oradell, New Jersey, \$34.95. The value and popularity of this primer is demonstrated by its appearance in a third edition. This 150 page guide introduces the physician to the legal world; valuable information to avoid traps and pitfalls in the courts. Good insights are given to the legal processes of medical malpractice suits and personal injury litigation.

Mandell, Harvey and Howard Spiro, editors, 1988, *When Doctors Get Sick*, Plenum Publishing Corp., New York, New York, \$25.00. When some 50 physicians and medical students relate their personal experiences with illness, hospitalizations and dealing with medical professional services, the stories are eye-openers. Coping with one's own illness is oftentimes a challenge. Physician's attitudes to a sick physician patient often lead to unhappy confrontations. The experiences related here should be required reading for all physicians.

Bergman, Abraham B., 1988, *The "Discovery" of Sudden Infant Death Syndrome: Lessons in the Practice of Political Medicine*, University of Washington Press, Seattle, Washington, paperback \$12.50. This is a revealing memoir of one physician's dedication to a cause and how frustrations continually thwarted his efforts to gain recognition of SIDS by the U.S. Department of Health and Human Services in order for research to be activated. The National SIDS Foundation, under the leadership of Abraham Bergman, learned a lot about the political process.

Conomikes, George S., 1988, *Successful Practice Management Techniques*, Conomikes Reports Inc., Los Angeles, California, \$15.95. The author, a practice management consultant, presents a collection of articles previously reported in his "Conomikes Reports." These concise articles cover numerous areas of the business of operating a medical office. Subjects include appointment scheduling, billing, computers, cost management, marketing, personnel management and telephone manners. Many helpful tips are included. This is a worthwhile publication to read if you feel your office management is in trouble.

Retirement . . . Are You Ready?

RETIREMENT ASPIRATIONS will more likely be fulfilled if financial planning begins early. Young people often commit most of their assets to family needs. When people reach middle age, they are more receptive to retirement planning. By then financial obligations may be decreasing and accumulation of retirement resources can begin.

Information about estimated retirement assets, income streams and retirement expenses must be accumulated. Current income and expense data must be adjusted for inflation to determine the potential gap in retirement income and the amount needed to fund the gap.

Retirement needs are about 60-70% of preretirement income. When you estimate your actual retirement expenses, remember some preretirement expenses may decline and other expenses (such as medical and recreation) may increase. Estimated retirement expenses may exceed estimated retirement income, especially for people in their 40s or 50s. Various strategies relying on the time value of money can be used to close the gap.

Tax Advantage Funding Vehicles

Strategies for funding a retirement income gap include:

- Accumulate retirement savings in tax-advantaged funding vehicles. Funding with pre-tax dollars and deferring tax on income cause retirement funds to accumulate faster.
- Deferred compensation agreements with employers may be advantageous for some clients, especially if employers pay interest on the deferred compensation.

Asset Reallocation

• Personal assets can be converted to income-producing property. Appreciating assets such as unimproved land or growth stocks can be converted into rental property or dividend-paying stocks. Such conversions can be delayed until retirement or until the income is needed if the appreciation is likely to exceed the yield on the converted assets.

• Closely-held business interests may be converted into income producing assets for retirement through complete redemption of stock, installment sales of the interests or sales of the business interests in exchange for private annuities.

Retirement Lifestyle

If assets to fund the projected retirement income gap are not available, the level of retirement expenses must be adjusted. Options include: moving into a smaller home, selling a second home, foregoing winters in a warm climate, moving to a cheaper part of the country, a part time career or delaying retirement.

Preretirement considerations should also be evaluated. Investment portfolios may need restructuring to emphasize quality investments, capital preservations, income and liquidity.

Retirement planning concerns attitudes and activities, as well as financial planning. Attitude problems, as well as inactivity, can make retirement stressful.

Retirement takes preparation. Before retiring, people may spend 50 or 60 hours a week on work-related activities and much of their social life may also be related to work. By planning, individuals can decide on activities to replace work-related events — activities that will give them the satisfaction of retiring to something fulfilling and enjoyable.

Local Anesthetics

LOCAL ANESTHETICS ARE ADMINISTERED in a variety of clinical situations to block the conduction of nerve impulses. Autonomic, sensory and motor impulses can all be interrupted with local anesthetics to produce autonomic nervous system blockade, anesthesia and muscle paralysis. Spontaneous recovery of nerve conduction following administration of a local anesthetic occurs over time without evidence of neural damage. The purpose of this article is to review the mechanism of action, pharmacology, pharmacokinetics, clinical use and adverse effects of this very commonly used class of drugs.

Mechanism of Action

The conduction of an impulse along a nerve fiber is a function of changes in the electrical gradient that exists across the nerve membrane. When a stimulus of sufficient intensity reduces the resting membrane potential to the threshold potential, a spontaneous depolarization occurs and is propagated along the nerve. Depolarization results from the rapid movement of sodium ions into the intracellular space through specific sodium channels. The flow of potassium ions from the interior to the exterior of the cell then results in repolarization of the nerve membrane to its resting potential. Following completion of the action, potential ionic equilibrium is restored by activation of the sodium-potassium pump.

Local anesthetics prevent depolarization of a nerve membrane by inhibiting movement of sodium ions through sodium channels.^{1, 2} This reduction in the permeability of the mem-

brane to sodium ions slows the rate of depolarization, the threshold potential is not reached and no action potential produced. Local anesthetics do not alter the resting membrane potential or the threshold potential of the membrane and have minimal effect on potassium conductance.³

To produce a clinical effect, local anesthetics must penetrate the lipoprotein cell membrane and interact with specific receptors within the sodium channels. In solution local anesthetics exist as both positively charged cations and uncharged base. Both forms of the drug are involved in producing nerve blockade. Following administration of a local anesthetic, the base form diffuses across the nerve sheath. After entering the axoplasm, the local anesthetic then dissociates and an equilibrium is established between the base and cationic forms of the drug. The degree of ionization that occurs depends upon the pKa of the specific local anesthetic administered and the pH of the solution. The charged cation then binds to specific receptors in the sodium channel. Uncharged molecules may also contribute to the local anesthetic action by acting directly upon the cell membrane. Through these 2 mechanisms sodium flux is inhibited and conduction blockade is achieved.⁴

Sodium channels in a nerve membrane exist in 3 states during the different phases of the action potential: activated-open, inactivated-closed and rested-closed.^{5, 6} In a resting nerve an equilibrium exists between the rested-closed and the inactivated-closed states. During an action potential, the sodium channels cycle from rested-closed to activated-open to inactivated-closed configurations. Inactivated-closed channels have a higher affinity for local anesthetics. It has been suggested these drugs

This article was written by Robert Forbes, M.D., assistant professor and David Murray, M.D., assistant professor, Department of Anesthesia, U. of I. Hospitals and Clinics. It was edited by John Kasik, M.D.

bind selectively to the inactivated-closed channels stabilizing them in this configuration. This prevents conversion to the activated-open state in response to a nerve impulse and blocks propagation of an action potential along the nerve.

It is believed most local anesthetics stabilize the sodium channels in the inactivated-closed state by binding to specific receptors that correspond to the internal gate within the sodium channel.^{6, 7} However, other mechanisms of conduction blockade may also exist. Local anesthetics, such as benzocaine, that occur only in a nonionized state, appear to alter the nerve membrane in such a way that the diameter of the sodium channel is decreased and tetrodotoxins inhibit nerve conduction by their action on receptors at the external surface of the sodium channel.

Pharmacology

Local anesthetics consist of lipophilic and hydrophilic portions joined by a hydrocarbon chain. The lipophilic end, essential for anesthetic activity, is generally an unsaturated aromatic ring, such as para-aminobenzoic acid. It is joined to the hydrocarbon chain by an ester (-CO-) or amide (-NHC-) bond and it is this bond that is used to classify these drugs as ester or amide local anesthetics. The basic differences between these 2 types of local anesthetic are related to their metabolism and their potential for producing allergic reactions. Solubility, potency, metabolism and duration of action of local anesthetics can be altered by changes in the structure of the hydrocarbon chain, aromatic ring, or the tertiary amine.

Pharmacokinetics

The disposition of local anesthetic agents depends upon their absorption, distribution, metabolism and excretion following administration.^{8, 9}

Absorption is determined by the site of injection, the presence of epinephrine in the anesthetic solution and by the specific agent that is used. Systemic absorption of local anesthetic occurs rapidly after an intercostal nerve block but much more slowly following infiltration into subcutaneous tissues. The addition of epinephrine to the solution results in vasoconstriction in the area of administration. This decreases the rate of absorption of many local anesthetic agents. When added to lido-

caine, epinephrine reduces the peak plasma concentration achieved by about 33% and also prolongs the duration of the neural blockade.¹⁰

Distribution of local anesthetics following systemic absorption occurs throughout the total body water. The initial elimination of these drugs from the blood results from their uptake and distribution into highly vascular tissues. A slower, secondary fall in plasma levels reflects both redistribution to less vascular tissues as well as metabolism and excretion of the drug.¹¹

The metabolism of local anesthetics varies according to their chemical classification. Ester-type local anesthetics, such as procaine and tetracaine, are hydrolyzed in the plasma by pseudocholinesterase and the metabolites are excreted in the urine.^{12, 13} One important metabolite produced by the hydrolysis of ester anesthetics is para-aminobenzoic acid. It is this compound that is believed to produce many of the allergic reactions seen with this type of local anesthetic.¹⁴

Amide-type local anesthetics undergo microsomal enzymatic degradation in the liver.¹⁵ The metabolic pathways for all the amide compounds have not been determined. However, much of an administered dose will appear as various metabolites that are excreted in the urine.

Clinical Uses of Local Anesthetics

Local anesthetics are used most frequently to produce regional anesthesia that can be classified according to the site of drug placement, as topical anesthesia, local infiltration, peripheral nerve block, intravenous block, epidural block or subarachnoid block.

1. *Topical Anesthesia* — Local anesthetics produce surface anesthesia when placed on the mucous membrane of the eye, the upper airway and tracheobronchial tree, or the genitourinary tract. Lidocaine, cocaine and tetracaine are the agents most commonly used for this purpose. Cocaine has the additional advantage of also causing vasoconstriction that may decrease bleeding at the operative site. When local anesthetic sprays are used to produce anesthesia of the tracheobronchial tree, rapid absorption of local anesthetic into the systemic circulation and plasma concentrations equal to the level achieved following in-

(Please turn to page 588)

travenous injection may be seen.¹⁶ Therefore, care must be taken to avoid toxic reactions when local anesthetics are used in this way.

2. *Local Infiltration* — Local anesthesia for minor surgical procedures can be achieved by simple extravascular infiltration of a dilute anesthetic solution into the surgical site. This will produce blockade of the subcutaneous sensory nerves and the dose required depends upon the extent of the surgery. If a large volume of anesthetic solution is required, the maximum recommended dose should not be exceeded.

'Signs and symptoms of CNS toxicity include numbness of the lips, light headedness and vertigo.'

The duration of anesthesia can be prolonged by the addition of epinephrine in a 1:200,000 dilution to the anesthetic solution. However, use of epinephrine is contraindicated in tissues supplied by end-arteries, such as the fingers, toes or ears because vasoconstriction in response to the epinephrine may result in tissue ischemia or necrosis.

3. *Peripheral Nerve Block* — Regional anesthesia can also be achieved by injection of an anesthetic agent into close proximity of a specific peripheral nerve or nerve plexus. The local anesthetic then diffuses from the outside of the nerve bundle toward the center producing anesthesia along the concentration gradient. Due to the characteristic anatomical distribution of fibers within a mixed nerve, this results in the predictable spread of anesthesia from proximal to distal. Blockade of autonomic and motor nerves may accompany the sensory block.^{17, 18}

The speed of onset of a peripheral nerve block depends upon the rapidity with which the drug penetrates the nerve membrane. The duration of action is affected by the dose administered, the lipid solubility and protein binding of the specific agent used and the presence of epinephrine in the solution. Administration of bupivacaine with epinephrine 1:200,000 can produce a nerve block lasting up to 24 hours.

4. *Intravenous Block* — Injection of an anesthetic solution into the venous system of a

limb isolated from the systemic circulation by a tourniquet can produce rapid, profound anesthesia and muscle paralysis.¹⁹ This is a simple, effective method of producing regional anesthesia for operations involving the hand and forearm. The duration of the block is limited by the time that the tourniquet can be kept inflated. Anesthesia recedes following release of the tourniquet because restoration of limb blood flow rapidly dilutes the concentration of local anesthetic. There is a risk of a toxic local anesthetic reaction if the tourniquet is released prematurely. Deflation of the tourniquet should be avoided for at least 15 minutes following initial injection of the drug.²⁰

Lidocaine and prilocaine are the local anesthetics most commonly used to produce intravenous anesthesia because of their relatively low toxicity and rapid metabolism. The use of bupivacaine for regional anesthesia has been associated with profound cardiovascular depression and intractable dysrhythmias.²¹ Therefore, the use of bupivacaine for intravenous blocks is contraindicated.

5. *Epidural Block* — Placement of a local anesthetic solution into the epidural space produces effective analgesia or anesthesia. Two mechanisms of action appear to be involved. First, the local anesthetic diffuses through the dura to act directly upon nerve roots and the spinal cord. Also, anesthetic solution moves through the intervertebral foramina and blocks spinal nerves in the paravertebral space. Because the onset of anesthesia depends upon this diffusion process, up to 45 minutes may be required before an adequate sensory block is achieved. Lidocaine, chlorprocaine and bupivacaine are all effective agents for producing epidural anesthesia.²² When used to provide analgesia during labor, epidurally administered local anesthetics cross the placenta and may produce detectable effects in the fetus and newborn.¹²

6. *Subarachnoid Block* — Local anesthetics, primarily lidocaine or tetracaine, injected into the lumbar subarachnoid space produce subarachnoid or spinal anesthesia by their effect upon the spinal cord and preganglionic fibers in the anterior rami. Due to differences in the sensitivity of different types of nerve fibers to the effects of local anesthetics, zones of differential anesthesia occur. Consequently, sympathetic denervation extends 2 spinal segments higher than the level of sensory block,

and motor block extends about 2 segments below the sensory level. The height of sensory block achieved during spinal anesthesia can be controlled by using hyperbaric or hypobaric anesthetic solutions and by manipulation of the patient's posture.²³

Spinal anesthesia may be accompanied by significant cardiovascular side effects. Sympathetic blockade leads to vasodilation, particularly of the capacitance vessels, causing a decrease in venous return, cardiac output, and blood pressure. In addition, during high spinal anesthesia the sympathetic cardiac accelerators arising from spinal nerves T1 to T4 may also be blocked causing bradycardia. Overall, myocardial oxygen requirements are generally decreased during spinal anesthesia because of the decrease in heart rate, venous return and blood pressure that occurs.

Hypotension associated with high or total spinal anesthesia may also cause respiratory arrest due to ischemia of the medullary respiratory center. It is unusual for apnea to be caused by a direct effect of the local anesthetic causing blockade of the phrenic nerves.

7. *Other Uses* — Local anesthetics can also be used in the treatment of grand mal seizures, increased intracranial pressure and cardiac dysrhythmias.

Adverse Effects

Adverse effects occurring during the use of local anesthetics are generally due to allergic reactions or systemic toxicity. Allergic reactions to local anesthetics are rare and the majority of adverse reactions that occur are, in fact, attributable to systemic toxicity resulting from high plasma concentrations of the drug.

1. *Allergic Reactions* — When allergic reactions do occur they are frequently related to the metabolites of the ester-type local anesthetics. These metabolites are structurally related to para-aminobenzoic acid, and manifestations of an allergic reaction include rash, urticaria, laryngeal edema, bronchospasm, and hypotension.^{14, 24} Allergic reactions may also be due to the presence of preservatives, such as methylparaben, that are commonly found in commercial local anesthetic preparations. Cross-sensitivity can occur between different ester local anesthetics but not between ester and amide-type anesthetics, if the solutions used are preservative free.

2. *Systemic Toxicity* — Systemic toxicity due

to local anesthetics occurs when excessive plasma concentrations of the drug are produced. This most commonly occurs following inadvertent intravascular injection of a local anesthetic. However, excessive plasma concentrations can also occur following rapid absorption from an extravascular injection site. The speed and magnitude of systemic absorption depends upon the dose, the pharmacologic properties of the drug administered, the presence or absence of vasoconstrictors in the anesthetic solution and the vascularity of the injection site. Clinical manifestations of local anesthetic toxicity most frequently involve the central nervous system and the cardiovascular system.

The central nervous system is very sensitive to the effects of local anesthetics.²⁵ Signs and symptoms of CNS toxicity include numb-

'Systemic absorption of local anesthetic occurs rapidly after an intercostal nerve block but much more slowly following infiltration into subcutaneous tissues.'

ness of the lips, lightheadedness and vertigo. This may be followed by visual disturbances and tinnitus and the patient may become disoriented or drowsy. Signs of CNS excitation may also occur including slurred speech, shivering and muscle twitches of the face and extremities. This can progress rapidly to generalize tonic-clonic convulsions. When a very large dose of local anesthetic is administered, initial CNS excitation may be followed by central depression, hypotension, and apnea.

Emergency treatment of seizures due to local anesthetic toxicity includes securing the airway, administration of oxygen, and assisting ventilation, if necessary. Thiopental or diazepam are effective for controlling the seizures.

The cardiovascular system is more resistant to the toxic effects of local anesthetics. As the plasma concentration of a local anesthetic increases, conduction time through the heart slows prolonging the PR and QRS intervals.

(Please turn to page 590)

With higher plasma concentrations, pacemaker activity in the sino-atrial node is also depressed causing sinus bradycardia or sinus arrest. Similar depression at the atrioventricular node may result in partial or complete AV dissociation.²⁶

Local anesthetics in toxic concentrations are also negative inotropes. The more potent, highly lipid-soluble agents, such as bupivacaine, tend to be the most cardiotoxic; and severe cardiac depression and dysrhythmias following inadvertent intravascular injection has been reported.^{21, 27} The dysrhythmic activity of bupivacaine is due to inhibition of sodium conductance. This causes a decrease in the rate of depolarization leading to conduction blockade and reentrant ventricular dysrhythmias.²⁸ Although lidocaine has a similar action on cardiac cells the effect is transient. In addition, all local anesthetics, except cocaine, cause peripheral vasodilation, which may exacerbate the hypotension caused by myocardial depression.

Overall, the incidence of adverse reactions to local anesthetics is extremely low if these agents are administered appropriately.

Conclusion

Administration of a local anesthetic is an effective technique for providing analgesia and anesthesia. The appropriate choice of a particular local anesthetic in any specific clinical situation depends upon an understanding of the type and duration of block required, the clinical status of the patient, and an appreciation of the potential for adverse systemic effects. When administered carefully, local anesthetic agents are safe, useful medications.

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Quality Assurance

ONE DIMENSION OF QUALITY is defining basic elements. For example, what kind of training and review must an individual undergo to practice medicine.

The Iowa Department of Public Health (IDPH) has a vital role with ensuring quality health services for Iowans. The department enacts that role by supporting the ongoing definition of the characteristic elements of health care professionals, health care programs and medical equipment.

Assuring quality involves an ongoing process of information gathering, public debate and consensus and administrative support. To inspire confidence that our health care services are what the public expects them to be is one of the most critical functions of the department.

This article focuses on the department's quality assurance activities.

Health Care Professionals

The IDPH provides administrative support to boards of medical examiners, dental examiners, nursing, pharmacy and 15 other health-related licensing boards. These boards set standards, license applicants and investigate complaints for approximately 110,000 health care professionals.

Each board contributes to defining the characteristic elements of their respective profession. Boards help ensure quality by engaging in the difficult task of deciding what constitutes required preservice training and how applicants demonstrate competency in their fields. Also, recognizing ever changing knowledge and practice, the boards decide what kind of inservice or continued training

is necessary for the licensee to remain current.

At the other end of the continuum, professional licensure boards investigate complaints against health care professionals. When complaints are substantiated, the boards take appropriate disciplinary action.

Health Care Programs

The department licenses or certifies a variety of health related services. One of the most encompassing of these activities is the licensure of substance abuse treatment programs in Iowa.

Currently, 44 substance abuse treatment programs are licensed by the Commission on Substance Abuse. These programs served approximately 23,000 Iowans in FY1987.

Similar to the efforts by the health care professional licensure boards, the commission defines what constitutes substance abuse treatment and what are the basic features of a treatment program. This quality control process examines personnel, clinical programming, confidentiality practices, physical environs and other program elements. Licensed programs are routinely inspected to ensure compliance with quality standards.

Among other health care services the department works with to ensure quality are clinical laboratories (drug and HIV testing), diabetes clinics and radon testing.

Medical Equipment

Complimenting the department's quality assurance activities with people and programs are limited efforts to ensure quality of medical equipment.

The Radiological Health Section assures public health and safety as it relates to use of

radiation machines and radioactive materials. New areas to be addressed may include sources of non-ionizing radiation, e.g., suntan booths, laser light exhibits, etc.

Under contract with the U.S. Food and Drug Administration (FDA), the department evaluated the safety and maintenance of anesthesia gas delivery systems in 45 of the 129 Iowa hospitals with anesthesia capabilities.

The department will again submit legislative proposals to create a major medical equipment program to increase the level of protection from equipment related accidents. (The FDA reports 154 patient deaths, 283 pa-

tient injuries and 1,485 machine malfunctions due to anesthesia systems, defibrillators, dialysis units and electrosurgical units over the past 2 years.)

The department is engaged in other activities to promote quality health services in Iowa. In fact, quality assurance has been the primary responsibility of the department since its inception in 1880.

For additional information on these and other quality assurance activities of the Iowa Department of Public Health, contact Mike Coverdale, Public Information Coordinator, at 515/281-4342.

October 1988 Morbidity Report

<i>Disease</i>	<i>Oct 1988 Total</i>	<i>1988 to Date</i>	<i>1987 to Date</i>	<i>Most Oct. Cases Reported From These Counties</i>	<i>Disease</i>	<i>Oct 1988 Total</i>	<i>1988 to Date</i>	<i>1987 to Date</i>	<i>Most Oct. Cases Reported From These Counties</i>
AIDS	5	41	31	NA	Legionellosis	0	16	10	
Amebiasis	0	16	33		Malaria	0	2	5	
Brucellosis	0	1	3		Meningitis				
Chickenpox	163	6638	7722	Scattered	aseptic	6	33	66	Cedar, Clinton, Dallas, Linn, Scott
Campylobacter	46	407	348	Scattered	bacterial	7	86	69	Scattered
Cytomegalovirus	1	7	25	Sioux	meningococcal	0	0	3	
Eatons Agent					Mumps	1	35	414	Scott
Infection	0	0	54		Pertussis	8	30	55	Scattered
Encephalitis, viral	2	12	12	Delaware, Johnson	Rabies in animals	12	150	231	Scattered
Erythema					Reye Syndrome	0	0	0	
Infectiosum	2	115	887	Black Hawk, Dubuque	Rheumatic Fever	0	1	3	
Gastroenteritis					Rubella				
(GIV)	1974	16971	13248	Scattered	(German				
Giardiasis	53	346	360	Scattered	measles)	0	0	1	
Hepatitis, A	4	42	91	Franklin, Story, Woodbury	Measles	0	0	0	
Hepatitis, B	4	76	102	Page, Scott, Tama	Salmonellosis	32	218	155	Scattered
Hepatitis, Non					Shigellosis	32	259	84	Scattered
A-B	0	13	26		Toxic Shock				
Hepatitis					Syndrome	1	6	5	Scott
type unspecified	0	3	6		Tuberculosis				
Herpes Simplex	90	835	1011	Scattered	total ill	2	47	37	Polk, Story
Herpes Zoster	0	0	2		bact. pos.	1	39	37	Polk
Histoplasmosis	7	21	13	Black Hawk, Cerro Gordo, O'Brien, Scott, Polk	Typhoid Fever	0	0	0	
Infectious					Venereal diseases				
mononucleosis	33	139	150	Scattered	Gonorrhea	206	1830	2513	Scattered
Influenza,					Chlamydia	641	4029	3051	Scattered
lab confirmed	0	110	67		Syphilis	1	18	25	Pottawattamie
Influenza-like									
illness (URI)	3427	30733	30236	Scattered					

Other Non-Reportable Diseases: Guillian Barre — 1, Woodbury;
Yersinia — 1, Black Hawk; 2, Johnson; 1, Polk.

U. of I. College of Medicine

NEARLY TWO-THIRDS OF THE 30 PATIENTS with bulimia nervosa in a UI psychiatry study had other psychological problems, such as depression, substance abuse or some form of a personality disorder, in addition to the eating disorder. The UI study is unique in that it made comparisons between personality disorders in bulimic patients and personality disorders in a non-psychiatric community sample, says **William Yates, Psychiatry**. The study also showed that bulimic patients with a personality disorder or other problem were more likely to have a life-time history of depression or suicide attempts. Yates said the findings may help physicians in determining treatments. The personality disorder factors can act as a warning signal to doctors that a patient's case may be more complex or that the patient may need more aggressive treatment. It's not yet proven, however, that personality disorders increase a person's chances of developing bulimia, he said.

SCREENING TESTS FOR CHLAMYDIA TRACHOMATIS can be cost-effective and are recommended in moderate-risk women, according to a study by **Mary Nettleman, Internal Medicine**. The use of a low-cost direct antigen test as the sole basis for treatment represents the most practical approach and is a cost-effective alternative to no testing or treating. The study compared different diagnostic tests for cost and accuracy and to establish guidelines for testing women at moderate risk for the infection. Nettleman noted that screening for chlamydia has become widespread in practice, but there has been no evaluation for the cost-effectiveness of screening moderate risk women with any of the tests currently available.

GENERAL INFORMATION ON CANCER, cancer research programs, treatment protocols and support groups is available to Iowans

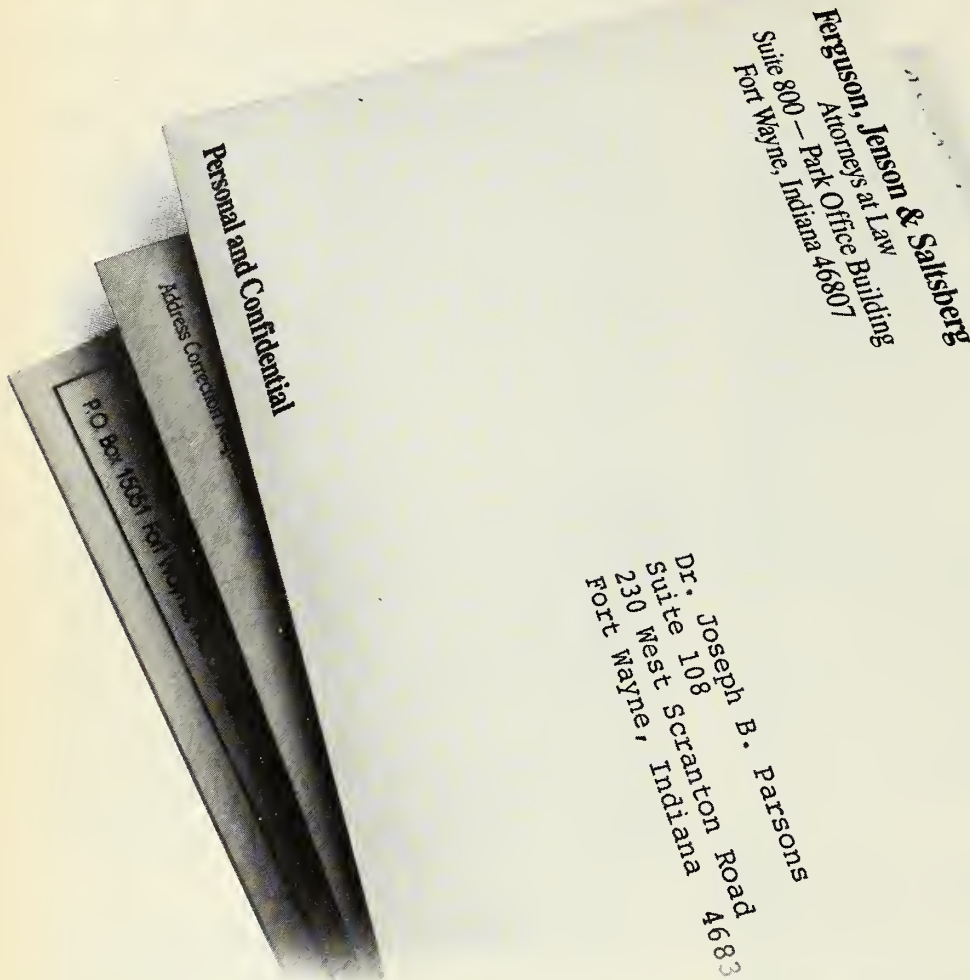
through the Cancer Information Service at the UI College of Medicine Cancer Center. For information, call the toll-free number, 800-237-1225, weekdays from 8 a.m. to 5 p.m.

CEDAR RAPIDS/MARION WILL BE A TEST SITE for a full array of community strategies to help smokers quit. A roulette wheel spin is how National Cancer Institute officials randomly chose which cities of previously selected pairs of cities would be "intervention" sites and which would serve as "controls" in the smoking-cessation study, said **Paul Pomrehn, Preventive Medicine and Environmental Health**, and principal investigator for the UI portion of the national study. It's the biggest behavioral end-point trial, officially called the Community Intervention Trial (COMMIT) for Smoking Cessation. Davenport/Bettendorf was selected as the non-intervention "control" community in COMMIT's midwest pair of cities. COMMIT will use several community "channels" such as work sites, health professionals, mass media and public education to implement its stop-smoking strategies, Pomrehn said.

GRANT NEWS . . . Melvin Marcus, Internal Medicine, is investigating the sensitivity of 3 commonly used diagnostic techniques for detecting coronary obstruction with a \$135,000 grant from the National Heart, Lung and Blood Institute. The validity of the 3 non-invasive imaging techniques being studied has come into question lately and needs to be re-evaluated. . . . **John Donelson, Biochemistry**, is working on developing a vaccine against onchocerciasis, using a \$151,000 grant from the Edna McConnell Clark Foundation. This tropical disease of the skin and eyes is caused by a parasitic worm. . . . **Robert Rea, Internal Medicine**, has received a 3-year award from the American Heart Association to study new techniques for investigating how the nervous system controls circulation in humans and how mechanisms affect high blood pressure in laboratory animals.

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About Iowa Physicians

Dr. John Griffin, Knoxville, has retired from surgical practice. Dr. Griffin received the M.D. degree at the University of Oklahoma College of Medicine, Oklahoma City, Oklahoma and completed a residency at the Veterans Administration Hospital, Des Moines. Dr. Griffin practiced in Arkansas for 2 years before moving to Knoxville where he practiced for 20 years. **Dr. Elaine Berry** has joined the Atlantic Medical Center. Dr. Berry received the M.D. degree at the U. of I. College of Medicine and served her residency at St. Luke's Regional Medical Center and the Marian Health Center, both in Sioux City. **Dr. Tim Olson** has joined the West Central Mental Health Center in Adel. Dr. Olson received the M.D. degree from Northwestern University Medical School, Chicago and completed a psychiatry residency at U. of I. Hospitals and Clinics. Prior to joining the Health Center, Dr. Olson practiced at Broadlawns Medical Center. **Dr. Joyce L. Christy** has joined Ankeny Family Practice. Dr. Christy was formerly in private practice at Northwest Medical Center in Cedar Rapids and the Urgent Care Center in Waterloo. **Dr. Matthew Sojka** was recently elected to serve a 2-year term as medical director of the Southeast Iowa Emergency Medical Services Council. Dr. Sojka is in family practice in Washington. **Dr. Sant M. S. Hayreh** has been selected as one of 25 physicians throughout the U.S. to receive a fellowship to the "Advances in Epilepsy Seminar" offered by the Comprehensive Epilepsy Center of the Bowman Gray School of Medicine of Wake Forest College in Winston-Salem, North Carolina. Dr. Hayreh has practiced neurology in Mason City since 1978.

Deaths

Dr. Rollin M. Perkins, 74, Davenport, died September 10 at Mercy Hospital in Davenport. Dr. Perkins received the M.D. degree at the

U. of I. College of Medicine and completed his residency at Methodist Hospital, Madison, Wisconsin. He retired in 1986 after 45 years of allergy practice in Davenport. Dr. Perkins became Scott County's medical examiner in 1961 and held that position until his death. He was a member of the National Association of Medical Examiners, the International Association of Medical Examiners and Coroners and a life member of the Iowa Medical Society.

Dr. Harold Morgan, 82, Mason City, died September 6 at St. Joseph Mercy Hospital, Mason City. Dr. Morgan received the M.D. degree from U. of I. College of Medicine. In 1933 he joined the staff of St. Joseph Mercy Hospital, Mason City, where he worked as a pathologist and radiologist. He continued to practice in Mason City until his retirement in 1969. Dr. Morgan was a member of the American Cancer Society.

Dr. Donald B. Blume, 76, Sioux City, died September 26 at his home. Dr. Blume received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and served his internship in Hartford, Connecticut. He maintained a private practice in Sioux City for 35 years, retiring in 1975. Dr. Blume was a past president of the Woodbury County Medical Society and a life member of the Iowa Medical Society.

Dr. Clyde A. Lindquist, 41, Fort Dodge, died September 22, as a result of a plane crash. Dr. Lindquist received the M.D. degree at the U. of I. College of Medicine and completed a residency at Peter Bent Bringham Hospital in Boston, Massachusetts. He practiced surgery at Burbank Hospital, Fitchburg, Massachusetts before becoming director of emergency care at Trinity Regional Hospital, Fort Dodge. Dr. Lindquist was also director of emergency services at Spencer Municipal Hospital and owned Emergency Services and Management Company, Fort Dodge.

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Replacing the Supply

RETIRING PHYSICIANS, particularly those in solo practice in rural Iowa, often leave a gap that is difficult to fill. Organized medicine is becoming increasingly concerned over the number of small towns across America which have no "town doc" and find it almost impossible to recruit one.

At a recent Family Practice Opportunities Fair, there were over 70 Iowa communities trying to recruit at least one physician. The problem of physician maldistribution — too many specialists in big cities and not enough family practice physicians in small towns — is becoming more acute.

Also of concern is the fact the number of students applying to medical school dropped 30% between 1977 and 1987. The cost of malpractice insurance, increased government involvement and the high price tag on a medical education all make medicine a less attractive career. The dip in the number of applicants has some wondering if the quality of medical care will suffer.

However, a number of people are initiating efforts to solve these problems. The American Medical Association is advocating loan deferments for all medical residents for the duration of their postgraduate training, regardless of where the loans came from or how long the training lasted. Since residents are typically paid modest salaries, giving them adequate time to begin repaying loans may attract more people to the profession.

Towns in rural America are becoming more aggressive in efforts to recruit physicians. They place recruiting ads in national publications touting the advantages of life in their small towns and offer physicians all sorts of perks such as guaranteed salaries and vacation coverage.

A recent edition of AM NEWS contained an article about residents of Ashland, Maine, who used a very creative approach. They taxed everyone \$5.75 per year and sent a physician's assistant through medical school. Ashland and 5 neighboring communities took part in the project and they now have a physician committed to remaining in the area.

Most significant of all is the fact some physicians are beginning to talk about changing attitudes within the profession. They contend every time a frustrated physician says "I don't want my kids to go into medicine" or "Medicine is no fun anymore," that physician becomes part of the recruitment problem.

Larry Beaty, M.D., president of the Polk County Medical Society, said it very well in a recent news letter. "Maybe we need to reassess our situation. Why did we choose medicine? Probably not all of us had altruistic motives but I also doubt most of us went to medical school as a scheme to get rich quick. There are certainly a lot more forms to be filed, more people looking over our shoulders and more people determining our pay. Aren't there some positive aspects of medicine, too? Maybe we need to look at what's good with medicine and how it compares before tearing it down."

The spread of this philosophy — plus efforts by groups outside medicine — will assure the medical profession will continue to attract qualified young people and rural Americans won't be forced to drive long distances to find quality medical care.

December 1988

Iowa Medicine

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